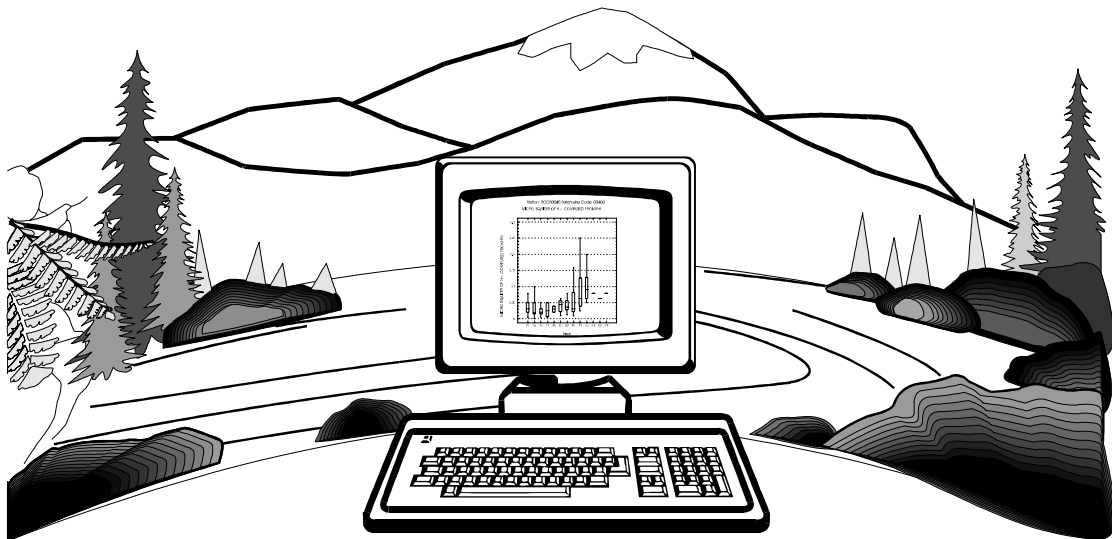


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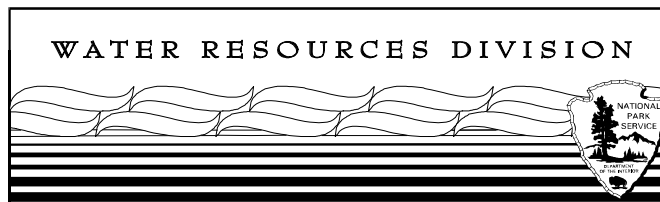
# BASELINE WATER QUALITY DATA

## INVENTORY AND ANALYSIS

### Manassas National Battlefield Park



#### WATER RESOURCES DIVISION AND SERVICEWIDE INVENTORY AND MONITORING PROGRAM



*National Park Service - Department of the Interior  
Fort Collins - Denver - Washington*

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**BASELINE WATER QUALITY DATA**  
**INVENTORY AND ANALYSIS**  
**MANASSAS NATIONAL BATTLEFIELD PARK**

National Park Service  
Water Resources Division  
Fort Collins, CO 80525

Technical Report NPS/NRWRD/NRTR-97/99

MARCH 1997

United States Department of the Interior  
National Park Service  
Washington, D.C.



## EXECUTIVE SUMMARY

This document presents the results of surface-water-quality data retrievals for Manassas National Battlefield Park (MANA) from six of the United States Environmental Protection Agency's (EPA) national databases: (1) Storage and Retrieval (STORET) water quality database management system; (2) River Reach File (RF3); (3) Industrial Facilities Discharge (IFD); (4) Drinking Water Supplies (DRINKS); (5) Water Gages (GAGES); and (6) Water Impoundments (DAMS). This document is one product resulting from a cooperative contractual endeavor between the National Park Service's (NPS) Servicewide Inventory and Monitoring Program, the National Park Service's Water Resources Division (WRD), and Horizon Systems Corporation to retrieve, format, and analyze surface water quality data for all units of the National Park System containing significant water resources. The primary goal of the project is to provide descriptive water quality information in a manner and format that is both consistent with the goals of the Servicewide Inventory and Monitoring Program and useable by park resource managers. The document provides: (1) a complete inventory of all retrieved water quality parameter data, water quality stations, and the entities responsible for the data collection; (2) descriptive statistics and appropriate graphical plots of water quality data characterizing period of record, annual, and seasonal central tendencies and trends; (3) a comparison of the park's water quality data to relevant EPA and WRD water quality screening criteria; and (4) an Inventory Data Evaluation and Analysis (IDEA) to determine what Servicewide Inventory and Monitoring Program "Level I" water quality parameters have been measured within the study area. Accompanying the report are disks containing digital copies of all data used in the report, as well as all components of the report (tables, figures, etc.).

The results of the retrievals for the study area from the IFD, DRINKS, GAGES, and DAMS databases located five industrial/municipal dischargers; no drinking water intakes; eight active or inactive U. S. Geological Survey (USGS) water gages (including stream, well, and climate); and five water impoundments. The results of the STORET retrieval for the study area yielded 45,195 observations for 381 separate parameters collected by the NPS, USGS, Interstate Commission on the Potomac River Basin, Virginia Department of Environmental Quality, Maryland Department of Natural Resources, and Virginia Polytechnic Institute and State University's Occoquan Watershed Lab at 50 monitoring stations. Of the 50 stations, one station within the study area (none within the park boundary) was established but contained no data. Thirteen stations were located within the park boundary (see Station Period of Record Tabulation).

Most of the monitoring stations represent either one-time or intensive single-year sampling efforts by the collecting agencies. Twenty-one stations within the study area (11 within the park boundary) yielded longer-term records consisting of multiple observations for several important water quality parameters (see Station Period of Record Tabulation). The stations yielding the longest-term records within the park boundary are: (1) Chinn Branch at Youngs Branch (MANA 0022); (2) Dogan Branch Warrenton Turnpike (MANA 0030); (3) Youngs Branch New York Avenue (MANA 0028); (4) Bull Run Sudley Springs (MANA 0024); and (5) Bull Run Ball's Ford (MANA 0017)<sup>†</sup>. The stations yielding the longest-term records within the study area, but outside of the park boundary, are: (1) Rt. 28 Prince William/Fairfax County (MANA 0001); (2) Rt. 29/211 Bridge (MANA 0007); (3) Cub Run Near Bull Run (MANA 0035); (4) Bull Run Near Catharpin, Va (MANA 0012); and (5) Route 705 Bridge (MANA 0038)<sup>††</sup>.

Screening criteria consisting of published EPA water-quality criteria and instantaneous concentration values selected by the WRD were used to identify potential water quality problems within the study area. While the criteria represent important threshold concentrations of pollutants, it is important to remember that criteria may have been exceeded due to any number of natural or anthropogenic factors, including errors in field, laboratory,

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<sup>†</sup>Water quality station location descriptions are verbatim from STORET. Any misspellings and abbreviations in STORET are replicated in this document.

<sup>††</sup>The Occoquan Watershed Lab maintains a long-term monitoring program at several stations in the MANA study area covering a period of record from 1973 to the present. Only data from 1973 to 1978 are in STORET and contained in this report. Additional data can be obtained by contacting the Occoquan Watershed Lab.

and/or recording procedures. The reader is advised to read the Introduction for additional caveats in interpreting the exceeded criteria in this report. The results of the MANA water quality criteria screen found 16 groups of parameters that exceeded screening criteria at least once within the study area. Dissolved oxygen, pH, chlorine, cadmium, copper, lead, mercury, and zinc exceeded their respective EPA criteria for the protection of freshwater aquatic life. Nitrate, nitrite, nitrite plus nitrate, sulfate, cadmium, lead, mercury, and nickel exceeded their respective EPA drinking water criteria. Bacteria concentrations (total coliform and fecal coliform) and turbidity exceeded the WRD screening limits for freshwater bathing and aquatic life, respectively.

Dissolved oxygen concentrations were measured 2,180 times at 36 monitoring stations from 1971 through 1996. Sixty-seven observations at 15 stations were less than or equal to the 4 milligrams per liter (mg/L) EPA criterion for the protection of aquatic life. Approximately 79 percent of the observations exceeding the criterion were collected within the MANA park boundary in Youngs Branch (MANA 0021, MANA 0028, MANA 0032, MANA 0033, MANA 0034), Bull Run (MANA 0017, MANA 0024), Chinn Branch (MANA 0022), Holkums Branch (MANA 0020), and Dogan Branch (MANA 0030) from 1990 through 1994.

The pH was measured 2,291 times at 42 monitoring stations from 1952 through 1996. One-hundred-eighty-eight observations at 31 stations were outside the pH range of 6.5 to 9.0 standard units (SU) (EPA chronic criteria for freshwater aquatic life). Five observations were greater than or equal to pH 9.0 and 183 observations were less than or equal to pH 6.5. The highest reported pH was 9.5 SU in Flat Branch at the Route 1501 Bridge (MANA 0016) in May 1979. The lowest pH of 2.1 SU was reported in Youngs Branch (MANA 0021) in March 1985.

Turbidity was measured 1,201 times at 16 monitoring stations from 1982 through 1996. One-hundred-seventy-eight observations at 14 stations exceeded the WRD screening criterion of 50 turbidity units (JTU/FTU/NTU). Ninety-six percent of the observations exceeding the criterion were collected within the MANA park boundary, particularly in the southern half of the park (MANA 0017, MANA 0020, MANA 0021, MANA 0022, MANA 0028, MANA 0030, MANA 0032, MANA 0034) from 1983 through 1994, including the highest reported value of 360 NTU in Dogan Branch, just upstream of the Warrenton Turnpike (MANA 0030), in July 1987.

Total coliform concentrations were measured 52 times at nine monitoring stations from 1973 through 1978. Thirty observations at nine stations within the study area but outside the park boundary (MANA 0003, MANA 0006, MANA 0007, MANA 0012, MANA 0013, MANA 0015, MANA 0016, MANA 0035, MANA 0036) exceeded the WRD bathing water criterion of 1,000 Colony Forming Units/Most Probable Number per 100 milliliters (CFU/MPN/100 ml). Seventy percent of the observations exceeding the criterion were reported from seven stations in the southeastern corner of the study area (MANA 0003, MANA 0006, MANA 0007, MANA 0013, MANA 0015, MANA 0016, MANA 0035) from 1973 through 1977, including the highest value of 110,000 MPN/100 ml reported in Flat Branch (MANA 0015) in April 1977. Fecal coliform concentrations were determined 943 times at 31 monitoring stations from 1971 through 1996. Of the 942 observations used in the criteria analysis (see Remark Code Screen in the Methodology for explanation), 255 observations at 26 stations located throughout the study area exceeded the WRD bathing water criterion of 200 CFU/MPN/100 ml. Sixty-four percent of the observations exceeding the criterion were reported from 11 stations in the southeastern corner of the study area from 1971 through 1996. The highest value of at least 24,000 MPN/100 ml was reported in Bull Run near Catharpin (MANA 0012) in April 1976.

Nitrate concentrations (including dissolved and total as N and dissolved as  $\text{NO}_3$ ) were measured 932 times at 32 monitoring stations from 1952 through 1996. Twenty-eight total concentrations in Bull Run at the Route 28 Bridge (MANA 0001) exceeded the drinking water criterion of 10 mg/L for concentrations as N from 1980 through 1995. The highest reported concentration of 20.9 mg/L occurred in September 1993. No observations exceeded the drinking water criterion of 44 mg/L for concentrations as  $\text{NO}_3$ .

Nitrite concentrations (including dissolved and total as N and dissolved as  $\text{NO}_2$ ) were measured 1,053 times at 27 monitoring stations from 1971 through 1996. Fifteen concentrations as N in Bull Run (MANA 0005, MANA 0006), Flat Branch (MANA 0015, MANA 0016), and Cub Run (MANA 0013, MANA 0035) exceeded the drinking water criterion of 1.0 mg/L for concentrations as N. The highest concentration as N, 2.549 mg/L, was reported in Flat Branch at the Route 1501 Bridge (MANA 0016) in July 1976. One concentration of 6.70 mg/L as

NO<sub>2</sub> in Bull Run near Manassas (MANA 0005) and one concentration of 4.10 mg/L as NO<sub>2</sub> in Cub Run near the Route 658 Bridge (MANA 0013) exceeded the drinking water criterion of 3.3 mg/L for concentrations as NO<sub>2</sub> in July 1974.

Nitrite plus nitrate concentrations (including dissolved and total) were measured 1,694 times at 37 monitoring stations from 1975 through 1994. Of the 1,654 observations used in the criteria analysis (see Composite Type Screen in the Methodology for explanation), six total concentrations, ranging from 10.78 mg/L to 16.63 mg/L, in a farm canal in northwestern Prince William County (MANA 0047) and one total concentration of 13.6 mg/L in Bull Run at the Route 28 Bridge (MANA 0001) exceeded the drinking water criterion of 10 mg/L from 1978 through 1981.

Total residual chlorine concentrations were measured 99 times at six monitoring stations from 1974 through 1986. Thirty-one concentrations at five stations in the southeastern corner of the study area (MANA 0001, MANA 0003, MANA 0006, MANA 0007, MANA 0016) exceeded the acute freshwater criterion of 0.019 mg/L from 1974 through 1986. The highest reported value was 1.80 mg/L in Flat Branch at the Route 1501 Bridge (MANA 0016) in November 1976.

Total sulfate concentrations were measured 163 times at 18 monitoring stations from 1952 through 1996. One observation of 400 mg/L reported at a well head in Manassas (MANA 0029) exceeded the secondary drinking water criterion of 250 mg/L in March 1975.

Cadmium concentrations (including dissolved and total) were measured 65 times at 13 monitoring stations from 1971 through 1994. Of the 21 observations used in the criteria analysis (see EPA Water Quality Criteria Analysis for Station in the Interpretive Guide To Water Quality Results for explanation), three total concentrations, ranging from 10 micrograms per liter (µg/L) to 20 µg/L, in Bull Run at the Old Centerville Road (MANA 0006) from May 1972 through August 1973 and one total concentration of 6 µg/L in Bull Run at the Route 28 Bridge (MANA 0001) in July 1986 exceeded the acute freshwater criterion of 3.9 µg/L and the drinking water criterion of 5.0 µg/L.

Copper concentrations (including dissolved and total) were measured 66 times at 13 monitoring stations from 1971 through 1994. Of the 62 observations used in the criteria analysis (see EPA Water Quality Criteria Analysis for Station in the Interpretive Guide To Water Quality Results for explanation), two total concentrations of 30 µg/L and 20 µg/L in Bull Run at the Old Centerville Road (MANA 0006) in August 1971 and August 1973, respectively, and one total concentration of 20 µg/L in Bull Run at the Route 28 Bridge (MANA 0001) in August 1981 exceeded the acute freshwater criterion of 18 µg/L.

Lead concentrations (including dissolved and total) were measured 354 times at 18 monitoring stations from 1971 through 1994. Eleven total concentrations, ranging from 15 µg/L to 150 µg/L, in Bull Run (MANA 0006, MANA 0037), Cub Run (MANA 0007), Little Bull Run (MANA 0038), and in a farm canal in northwestern Prince William County (MANA 0048) equaled or exceeded the drinking water criterion of 15 µg/L from 1971 through 1980. Two of these 11 concentrations also exceeded the acute freshwater criterion of 82 µg/L. The two highest values of 150 µg/L were reported in the farm canal (MANA 0048) in January and September 1980.

Mercury concentrations (including dissolved and total) were measured 64 times at 13 monitoring stations from 1971 through 1994. One total concentration of 3.6 µg/L reported in Flat Branch at the Route 1501 Bridge (MANA 0016) exceeded the drinking water criterion of 2.0 µg/L and the acute freshwater criterion of 2.4 µg/L in March 1977.

Nickel concentrations (including dissolved and total) were measured 60 times at 11 monitoring stations from 1973 through 1994. One total concentration of 100 µg/L in Bull Run at the Route 28 Bridge (MANA 0001) equaled the drinking water criterion of 100 µg/L in July 1985.

Zinc concentrations (including dissolved and total) were measured 335 times at 18 monitoring stations from 1971 through 1994. Fourteen dissolved and total concentrations, ranging from 120 µg/L to 690 µg/L, on farmland in

northwestern Prince William County (MANA 0045, MANA 0047, MANA 0048), in Bull Run at the Old Centerville Road (MANA 0006), and at a well head in Manassas (MANA 0029) exceeded the acute freshwater criterion of 120 µg/L from 1973 through 1980. The highest value of 690 µg/L was reported in a farm canal in northwestern Prince William County (MANA 0048) in January 1980.

The IDEA conducted for MANA indicates that STORET data exist for 12 of the 13 Level I parameter groups in the study area. No STORET data exist for the parameter group Chlorophyll. For the groups Alkalinity, Flow, Nitrate/Nitrogen, Phosphate/Phosphorus, and Toxic Elements, less than 25 percent of the observations were recorded since 1985. Data for three groups (Flow, Sulfates/Total Dissolved Solids/Hardness, and Toxic Elements) were recorded at less than half of the 49 monitoring stations with data. Relative to other parameter groups, data were limited for the groups Alkalinity, Sulfates/Total Dissolved Solids/Hardness, Bacteria, and Toxic Elements. Results for 37 of the 126 EPA priority toxic pollutants (consisting of organic parameters, metals, and pesticides) were retrieved from STORET.

Surface water resources in the MANA study area include Bull Run, Cub Run, Little Bull Run, and numerous other streams, ponds, and springs. The data inventories and analyses contained in this report indicate that surface waters within the study area have been impacted by human activities, particularly south of U.S. Highway 29. Potential anthropogenic sources of contaminants include municipal and industrial wastewater discharges; urban stormwater runoff; agricultural runoff; residential development; and mining and quarrying operations.



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## **INTRODUCTION**

The National Park Service's (NPS) Organic Act of 1916 states that the mission of the NPS is to promote and regulate the use of national parks, monuments, and other units "... to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations." One task embodied by this mission is preserving and protecting water resources and water dependent environments in parks. Ensuring the integrity of park water quality, due to its importance in sustaining natural, aquatic park ecosystems and supporting human consumptive and recreational use, is fundamental to successfully addressing this task. The first step in ensuring the integrity of park water quality is defining historic and extant water quality.

This document represents one product of an ongoing effort by the NPS Water Resources Division (WRD) and the Servicewide Inventory and Monitoring Program to characterize baseline water quality using existing data at park units containing significant natural resources. This effort was initiated in 1993 by the award of a contract to Horizon Systems Corporation to retrieve, format, and analyze surface water quality data from the Environmental Protection Agency's (EPA) Storage and Retrieval (STORET) database system. The scope of work identified in the Request For Proposals outlined several sequential, interrelated project phases, including, but not limited to: (1) determining the water quality retrieval/query area around each park; (2) downloading and assessing the quality of the data from STORET; (3) generating basic water quality summary statistics and graphic plots; (4) reformatting water quality data for compatibility with the park-based Water Quality Data Management System presently under-development; and (5) providing recommendations concerning possible hardware, software, and personnel options for storing combined park databases in a centralized NPS water quality database. This report documents the results of phases one through four of this effort for this park unit.

### **Goal**

The goal of this document is to provide descriptive water quality information in a format usable for park planning purposes (eg. Water Resources Management Plans, Resource Management Plans, and General Management Plans). The report is designed to characterize baseline water quality rather than assess specific water quality problems at a park. This is consistent with the Servicewide Inventory and Monitoring Program's goal of obtaining basic, "Level I", water quality parameters for key waterbodies at each park (National Park Service 1993). Consequently, this report is best used as a reference document to help design new goal-driven water quality monitoring programs rather than as conclusive evidence of previous or existing water quality problems.

### **Purpose**

The purpose of this report is to inventory existing park water quality data; establish baseline water quality at the park; identify potential water quality problems; and establish a park water quality database. This report is intended to enable park resource managers to compare and contrast water quality data collected as part of ongoing inventory and monitoring programs with historical water quality trends. Additionally, this report is intended to foster better designed park-based water quality inventory and monitoring programs in the future. The water quality databases which accompany this report will also lay the groundwork for establishing a NPS water quality database that will allow Regions and Washington Offices to generate regional and national assessments of park water quality.

### **Objectives**

Specific objectives of the study documented in this report are to:

1. Retrieve water quality and related data from the EPA's STORET and other database systems;
2. Develop a complete inventory of all retrieved data;

3. Produce descriptive statistics and appropriate time series and box-and-whiskers plots of water quality data to characterize period of record, annual, and seasonal central tendencies and trends;
4. Compare water quality data with relevant national EPA water quality criteria on a station-by-station and study area basis;
5. Determine the presence and/or absence of the Servicewide Inventory and Monitoring Program's "Level I" water quality parameters within the study area; and
6. Reformat water quality and other related data for use in the park-based Water Quality Data Management System, presently under-development, and other appropriate analytical tools.

## **Document Overview**

This report is comprised of five chapters. The first chapter, this Introduction, provides a brief statement of the study's background; goal, purpose, and objectives; and the key personnel who helped produce the document. This chapter also contains this brief overview of the document's contents and important interpretive caveats to consider when referring to and using this document. The second chapter focuses on the methods, procedures, and databases that were employed to retrieve and analyze water quality data for the park. The third chapter is the user's interpretive guide to chapter four. Chapter three explains how to interpret all the tables and figures presented in chapter four. Chapter four, which likely comprises the majority of the document (unless there isn't much water quality data for the park), contains detailed inventories, descriptive statistics, graphics, and national EPA water quality criteria comparisons characterizing the park unit's water quality data on a station-by-station basis and over the entire study area. This chapter also contains a comparison of park water quality data with the Servicewide Inventory and Monitoring Program's "Level I" water quality inventory parameters and a listing of water quality observations that were outside the STORET edit criteria range. Chapter five, the Appendices, contains more specialized materials such as the file names and database structures included on floppy disk(s) with this report; STORET edit criteria; national EPA water quality criteria; Servicewide Inventory and Monitoring Program's "Level I" water quality inventory parameters; selected water quality references; and other materials which provide background on the methods, procedures, and databases used or produced by this study.

The water quality and other related data referenced in this report accompany the document on floppy disk. The water quality parameter data file is in DBASE III+<sup>1</sup> format and will be useable in the park-based Water Quality Data Management System presently under-development. The water quality stations, industrial facilities discharges, drinking water intakes, water gages, water impoundments, and River Reach databases are also in DBASE III+ and/or ASCII format for ready-use in Geographic Information Systems (GIS), Computer-Aided Design Systems, or Desktop Mapping Systems.

## **Caveats**

While intended primarily as a reference document, it is important that users peruse the first three chapters and Appendices of this report to better understand and interpret the results presented in chapter four. As a means for identifying potential areas for more intensive study, comparisons of the park's water quality data with relevant national EPA water quality criteria for appropriate designated uses<sup>2</sup> and with the Servicewide Inventory and

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<sup>1</sup>The use and/or mention of specific proprietary hardware or software packages is for informational purposes only and is not intended to connote or denote an endorsement.

<sup>2</sup>The Environmental Protection Agency's Quality Criteria for Water 1995 Final Draft (Silver Book) was the primary source of water quality criteria. In the spirit of the other caveats offered in this section, it is important to recognize that water quality criteria are often revised when new or better information become available.

Monitoring Program's "Level I" water quality inventory parameters have been made. Extreme caution must be exercised in interpreting the results of these comparisons. Observations that exceed water quality criteria may have occurred due to any number of natural or anthropogenic factors, as well as other reasons. For example, STORET is a "user-beware" water quality database system. While there is some rudimentary edit (bounds) checking of any data entered in STORET (See Appendix C), users are basically free to enter their own data. Beyond data entry errors, the possibility of inaccurate data entering the system due to inappropriate measurement techniques, sample mistreatment, and other reasons is a serious concern. Consequently, if observations for a particular parameter frequently exceed the EPA water quality criterion over a prolonged time period, the best approach is to examine in detail the data exceeding the criterion. Questions which should be asked regarding the data include: What water source(s) are manifesting the problem? Does the data make sense? Was it collected by a reputable organization following a sound study plan and employing accepted techniques? If the answers to these questions still cause concern, a specific cause and effect water quality investigation focusing on the parameters of concern may be warranted. Similarly, the absence of particular Servicewide Inventory and Monitoring Program "Level I" water quality parameters from the park only means that no entity or organization has collected and entered this data into the EPA's STORET database. Too frequently, data that are collected in and around NPS units never make it into the EPA's national water quality database. These data may exist in published or unpublished reports, file cabinets, or other databases. Before definitively concluding that no baseline data exist for a particular parameter, these alternative resting grounds for data should be investigated. Such a detailed exploration, however, was beyond the scope of this study.

## **Key Personnel**

Many individuals contributed to the design and implementation of this project. The primary contributors and their roles in the project are briefly mentioned below.

### National Park Service, Water Resources Division:

Dean Tucker was the Contracting Officer's Technical Representative responsible for designing, coordinating, and implementing all aspects of this effort.

Jill Minter coordinated and managed the team which prepared all components of the report.

Gary Rosenlieb provided administrative oversight and was involved in quality control for all tasks related to this project.

Barry Long and Roy Irwin reviewed technical tasks and provided water quality expertise related to data analysis.

Gary Smillie provided hydrologic expertise in the determination of hydrologic seasons.

Mike Matz helped prepare reports and write the Executive Summaries.

Elizabeth Eisenhauer, Scott Hermsen, Alicia Lizarraga, and J. Chris Echohawk provided digital cartographic support, both in determining retrieval/query areas and producing maps and graphics.

Kelli O'Connor uploaded water quality data to STORET prior to report preparation.

Jacque Nolan designed the cover.

Horizon Systems:

Cindy McKay served as Project Manager for Horizon Systems, performed the initial requirements analysis, and was involved in all quality control tasks related to the project.

Alan Cahoon was responsible for automating the procedures which produced the water quality databases and Water Quality Results chapter.

Sue Hanson, P.E., provided technical advice for writing this document.

Dr. Jim Loftis was the data quality analyst for the project.

Armando F. Ballofet, P.E., served as the local technical liaison between Horizon Systems and the NPS.

Other National Park Service:

Several other individuals provided invaluable technical review, comments, administrative support, and/or other assistance, including: Dan Kimball, Bill Jackson, Mark Flora, Gary Williams, John Karish, Brendhan Zubricki, Richard Hammerschlag, Randy Ferrin, Gary Vequist, Mike Martin, Kevin Berghoff, and Dyra Monroe.



## METHODOLOGY

This section provides an overview of the procedures and criteria used to retrieve and analyze water quality data for each park unit. Generating baseline water quality data inventories and analyses for all NPS units is a monumental task. To accomplish this undertaking given a very limited budget, the procedures employed to produce each report had to be as generic and automated as possible. Consequently, customization of reports to individual park needs and issues was not feasible. Moreover, such customization was beyond the scope of this effort which was simply intended to produce baseline water quality data inventories for all parks rather than customized issue-driven reports. During the procedure-development stages of the project, specifications for the final product evolved, within the context of the aforementioned resource constraints, to focus on comprehensive water quality baseline data inventories and concise, descriptive statistical examinations of the available water quality data for each park unit. Detailed below are the data sources and final methods and procedures that were used to create the baseline water quality inventories, analyses, databases, and other products for each park unit. A thorough understanding of the limitations of the data sources and procedures described in this chapter and the next (Interpretive Guide to Water Quality Results) is a prerequisite to intelligent use of the results presented in this document.

### Delineation of Park Study Area

The first step in retrieving water resources-related data for each park was deciding on a procedure to determine the study area boundary. Since water flows through parks, utilizing the park boundary as a simple query/study area was deemed inadequate. On the other end of the continuum, using the entire watershed as the study area was considered superfluous given: (1) the areal extent of certain park watersheds (eg. the entire Mississippi River); (2) the sheer volume of potentially irrelevant data such a large study area could generate; and (3) the resources required to specify the watershed for each park unit. The approach which was ultimately adopted - a modified hydrologic boundary - reflects a compromise between the park boundary and the entire watershed. Thus the study area employed for each park is an area extending at least three miles upstream and one mile downstream from the park boundary. Although these distances are somewhat arbitrary, this approach is easy to automate and was felt to limit the data retrieved, in most instances, to that of most importance to the park. Extending the query area one mile downstream of the park was intended to capture any data immediately downstream of the park which may reflect the quality of the water in the park. A current (as possible) copy of each park's boundary was obtained in digital format directly from the park or digitized from Regional land status maps, U.S. Geological Survey (USGS) quadrangles, or other sources. Using GIS techniques, the boundary was used to create the three miles upstream, one mile downstream buffer. For a few parks with which WRD water quality specialists were very familiar with potential water quality threats and/or valuable sources of data that may lie just outside the study area, the study area may have been tweaked (enlarged) to cover these areas of concern or interest. Unfortunately, a customized study area was not feasible for all park units. Hence, the three miles upstream, one mile downstream buffer was the primary study area employed for most parks. This study area was transferred to the EPA mainframe computer and used as the basis for all water resources-related data retrievals from the data sources described below.

### Data Sources

The EPA maintains many mainframe data systems related to national water resources (U.S. Environmental Protection Agency 1992). Six of these data systems were used for this project:

- STOrage and RETrieval System (STORET) - water quality parameter data, locations of sampling stations, descriptive elements about stations and parameters;
- Industrial Facilities Discharge (IFD) - locations of industrial and municipal point source discharge facilities;

- Drinking Water Supplies (DRINKS) - locations of intake pipes for drinking water supplies;
- Water Gages (GAGES) - locations of USGS and other water gages;
- Water Impoundments (DAMS) - locations of most large water impoundments (greater than 10,000 acre feet at normal pool volume) and many smaller impoundments; and
- River Reach File, Version 3 (RF3) - 1:100,000 scale geographical representation of surface waters (rivers, lakes, etc.) with a unique identifier assigned to each surface water segment and connectivity information useful for routing and navigation.

STORET is the national water quality data repository (U.S. Environmental Protection Agency 1989). Water quality data is entered in STORET by public agencies (federal, state, or local) that collect water samples and/or perform laboratory analysis. As such, STORET is a "user-beware" data system. Although the EPA manages the STORET data system and, since November 1983, has imposed some minimum quality control criteria on the data (See Appendix C), data are generated and input to STORET by the "owner" agencies. Consequently, the EPA does not certify any data within STORET. Currently, there are over 800,000 active and inactive sampling stations and more than 225 million observations covering in excess of 13,000 water quality parameters entered in STORET. The earliest data dates back to the turn of the century. Using the bi-monthly update cycle, user agencies may store results of recent monitoring activities in STORET. Included in STORET is USGS WATSTORE water quality data, which is updated on a monthly basis. Although STORET contains a phenomenal amount of data, it is important to note that data exist in STORET only if the collectors decide to upload their data to the system. Since many agencies and researchers do not upload their data to STORET, the absence of water quality data in the system for a particular area doesn't mean that there has never been any water quality data collected for the area. The data may exist in published or unpublished reports, file cabinets, or in agency-specific databases. Identifying and retrieving these other sources of data were beyond the scope of the present effort. All parameter data and water quality station location data downloaded from STORET within the park's study area are included in DBASE III+ format files on disk(s) accompanying this report (See Appendices A and B).

The data within the IFD database are extracted from the EPA's Permit Compliance System (PCS). IFD contains the facility locations of all industrial and municipal dischargers which require a National Pollutant Discharge Elimination System (NPDES) permit to operate. Over 7,100 municipal, federal, and industrial facilities discharging into the waters of the United States are tracked by PCS and IFD. If any industrial facilities discharges exist within the study area, a file in DBASE III+ format documenting a variety of information about each discharge accompanies this report on disk (See Appendices A and B).

The EPA DRINKS database identifies locations of drinking water supply intakes. This file contains data for 850 supplies which serve more than 25,000 people, and 6,800 supplies which serve between 1,000 and 25,000 people. If any drinking water intakes exist within the study area, a file in DBASE III+ format documenting a variety of information about each intake accompanies this report on disk (See Appendices A and B).

The GAGES data originates primarily with the USGS and copies are maintained on the EPA mainframe computer for ease of integration with other EPA national data systems. Although other agency's water gages, as well as some artificial gages, may appear in GAGES, the vast majority of gages are stream gages belonging to the USGS. The GAGES database contains approximately 36,000 records for both active and inactive gaging stations. If any USGS or other agency stream gages occur within the study area, a file in DBASE III+ format documenting several fields of information about each gage accompanies this report on disk (See Appendices A and B).

The Water Impoundment database was originally compiled by the U.S. Army Corps of Engineers in response to a Congressional inquiry on dam safety hazards (GKY and Associates 1990). The EPA subsequently modified the database for use in water quality investigations. Of the 68,155 dams in the database, 2,125 are considered large (impounding 10,000 acre feet or more at normal pool volume). It is important to note that while the database includes entries for 66,030 smaller dams, estimates place the actual number of dams in the U.S. at several million

(including small farm ponds). If any water impoundments occur within the study area, a file in DBASE III+ format documenting several fields of information about each impoundment accompanies this report on disk (See Appendices A and B).

The RF3 data system is a hydrologic database of surface water features across the U.S. (excluding, at present, Idaho, Oregon and Washington, which currently operate a different system - although this data is expected to be converted to RF3 soon, Alaska and Hawaii). RF3 was created primarily from 1:100,000 scale USGS Digital Line Graph data. RF3 is made up of over 3,000,000 individual "reaches". A reach is generally defined as a portion of surface water between two confluences (U.S. Environmental Protection Agency 1993). The linework underlying RF3 contains over 95,000,000 coordinate points. RF3 is designed to facilitate hydrologic routing, identifying upstream and downstream elements, and specifying the exact location of any point on a stream network. RF3 data exists as a series of traces with associated attributes. The EPA project which is producing RF3 is being conducted in three phases: Compilation, Assessment, and Revision. The Compilation phase is complete except for Idaho, Washington, Oregon, and Alaska. The Assessment phase was completed during the first half of 1994; while the Revision phase was begun in March 1994. One important outcome of the Revision phase is that the reach codes which uniquely identify each surface water feature will change. Consequently, these codes should not be used, at this time, as keys for relating other data to RF3. The RF3 data provided with this document is provisional and should be used only to provide a geographic backdrop for the park's water quality data. RF3 data covering each USGS catalog unit (a geographic area representing a single or multiple drainage basin(s), or some other distinct hydrologic feature (U.S. Geological Survey 1982)) touched by the park's study area is included in ASCII export and DBASE III+ formats on the disk(s) accompanying this report (See Appendices A and B).

For additional information on any of these data systems, contact the EPA Office of Water at (202) 260-7028.

### **Data Retrieval and Analysis Procedures**

The six EPA data systems discussed above reside on the EPA mainframe computer located in Research Triangle Park, N.C. Horizon Systems used a dedicated, leased telephone line with a data transfer rate of 9600 bits per second to download data occurring within the park's study area from all the databases. The bisynchronous communication software and hardware provided error checking during all data transfer procedures.

As described above, the park study/query area boundary was used to select the water quality stations, industrial facilities discharges, drinking water intakes, water gages, water impoundments, and river reaches associated with the park unit. For various reasons, screening criteria (described later in this section) were employed to select appropriate water quality stations, parameters, and observations. Horizon Systems wrote several mainframe programs to automate, to the greatest extent feasible, the STORET data retrieval and storage procedures. Once the data were extracted from the EPA data systems, they were downloaded to a microcomputer for statistical analyses and reformatted into DBASE III+ compatible format.

Specifically, once on the PC, the data were processed to:

- (1) Reformat the data into DBASE III+ format and other database structures;
- (2) Eliminate questionable data outside the STORET edit criteria ranges (See Appendix C);
- (3) Display on a map the location of water quality monitoring stations and other water resources themes;
- (4) Determine the frequency of water quality observations by station, parameter, and station/parameter;
- (5) Generate descriptive period-of-record water quality statistics in a tabular format;
- (6) Generate appropriate descriptive annual and seasonal analyses of the water quality data in a tabular format;
- (7) Plot appropriate period of record time series and annual and seasonal box-and-whisker graphs;
- (8) Compare the water quality data against relevant EPA national criteria; and

- (9) Compare the water quality data against the NPS Servicewide Inventory and Monitoring Program's "Level I" water quality parameters.

Special customized microcomputer programs (primarily written in Clipper and Microsoft Professional BASIC) and procedures were created to address each of these tasks. All reformatted database files are included on disk(s) accompanying this document. The contents of these databases are described briefly below. Complete database structures are included in Appendices A and B. The descriptive water quality tabular statistics (see "Statistical Analyses" below) were computed based upon NPS specifications. Command or batch files were generated to drive STATGRAPHICS 7.0 in order to produce all the time series and box-and-whiskers plots.

### **Park Unit Databases**

Up to seven digital databases in DBASE III+ and other formats have been created for the park by querying the water resources-related data sources described above. The disk(s) containing these databases accompany the report. The contents of each of these databases are discussed briefly below. More detailed documentation of these databases is included in Appendices A and B.

- (A) Water Quality Parameter Data: This database includes all the water quality parameter data downloaded from STORET that passed the STORET Edit Criteria, Date, Station Type, and Phase 0 Parameter screens (described below) and is summarized tabularly and graphically in this document. This constitutes the park's baseline water quality data. Since it is already in digital format, more sophisticated analysis of the data is possible than the descriptive statistics and graphics presented here.
- (B) Water Quality Station Locations: This database consists of the STORET header information describing each station where water quality data was collected. As the latitude and longitude of the station are included in the database, this file is easily imported into the park's GIS.
- (C) Industrial Facility Discharge Locations: This database includes any industrial or municipal point source discharges located within the park's study area. As the latitude and longitude of each discharge facility are included in the database, this file is easily imported into the park's GIS.
- (D) Drinking Water Intake Locations: This database includes any drinking water intakes located within the park's study area. As the latitude and longitude of each intake are included in the database, this file is easily imported into the park's GIS.
- (E) Water Gage Locations: This database includes water (stream, lake, estuary, well, spring, climate, or other) gages located within the park's study area. Most of the gages will likely be stream gages belonging to the USGS. As the latitude and longitude of each gage are included in the database, this file is easily imported into the park's GIS.
- (F) Water Impoundment Locations: This database includes any water impoundments (dams) located within the park's study area. As the latitude and longitude of each impoundment are included in the database, this file is easily imported into the park's GIS.
- (G) River Reach Data: This database includes all stream traces (1:100,000 scale) and attributes for reaches falling within any USGS catalog unit that touches the park's study area. The traces are geo-referenced in ASCII format. The attributes are in both ASCII export and DBASE III+ formats. This information is also readily incorporated into the park's GIS.

The absence of any of these seven files from the disk(s) accompanying the report indicates that there was either no data of this type within the park's study area or the data was unavailable. Several other files are included on the disk(s) accompanying this report, including digital copies of all the figures and tables contained in the document and some other items. Refer to Appendices A and B for detailed documentation of these files. Not included on

disk is an Encyclopedia File (for WRD reference) that documents the minimum and maximum values for each water quality parameter and the parks in which those values were recorded. When Baseline Water Quality Data Inventory and Analysis reports have been completed for all parks, this Encyclopedia File will be available upon request from the NPS WRD.

## **Screening Methodologies and Procedures**

Developing automated or semi-automated procedures to produce baseline water quality inventories and analyses for all national park units required constant testing and debugging of procedures. Three parks, Rock Creek Park, Yellowstone National Park, and Indiana Dunes National Lakeshore, were used to pilot test and refine the automated procedures. It became evident, after a preliminary analysis of all the downloaded STORET data, especially for Indiana Dunes National Lakeshore, that the specifications for the graphical analyses could generate hundreds (possibly thousands) of plots, many of which would not necessarily be useful. Also, there were many stations; parameters; and/or observations downloaded that were not part of the study's objectives; not overly useful; or of dubious quality. In order to reduce the number of graphical plots (time series, annual and seasonal box-and-whiskers) to fit within project resources, various screening criteria were investigated. Ultimately, a comprehensive set of screening criteria were developed to reduce the number of graphical plots. After initial counts of the total number of possible time series and annual and seasonal box-and-whiskers plots were generated, these counts were used to decide which screening criteria would be applied to limit the number of these plots produced for the park unit. Additional screening criteria were employed to restrict the tabular descriptive statistics results to only those deemed useful to the park. Table A provides the categories of screening criteria and to which analyses the screens were applied. A "yes" entry in the table means that the screening category eliminated or prevented data from appearing in certain tables and plots contained in the document. Consequently, in understanding how data from STORET was used in this report, it may be helpful to keep in mind the three general types of screening criteria: (1) screens that apply to stations; (2) screens that apply to certain parameters at stations; and/or (3) screens that apply only to particular observations of parameters at stations. A detailed description of each of the screening criteria categories follows this table. *It is important to note that statistics in "Inventory" reports may not be consistent with statistics in "Overview" reports since different categories of screening criteria were applied.* Also, if attempting to replicate the results of the statistical and graphical analyses presented in this document, be sure to follow the same screening methodologies.

### STORET Edit Criteria

As mentioned previously, STORET is a "user-beware" data system. As the EPA doesn't certify any data in STORET, public agencies enter and are responsible for the quality of their own data. Only data entered since November 1983 have been subjected to any rudimentary edit/bounds checking. Agencies entering data since this date can elect to override the edit/bounds checking for individual observations. USGS WATSTORE water quality data is entered into STORET without any EPA edit/bounds checking to ensure data integrity between WATSTORE and STORET. Unfortunately, during the course of our pilot tests, erroneous USGS and EPA water quality data values were discovered. In order to eliminate as much "bad" data as possible, all water quality data downloaded from STORET was subjected to automatic edit/bounds checking (STORET Edit Criteria contained in Appendix C) for the 190 most common parameters. Observations falling outside the STORET Edit Criteria were documented (See the Water Quality Observations Outside STORET Edit Criteria for Park section in the Water Quality Results chapter) and then retained or discarded from the database and all tables and plots based on whether the value was judged as being in the realm of possibility. Although the STORET Edit Criteria screen likely removed some "bad" data for these common parameters, the probability of other erroneous data in the database is high. Be sure to consult the Caveat section in the Introduction.

Table A. Categories of Screening Criteria and to Which Output Products They Apply (A "yes" Entry Means the Screening Category Eliminated or Prevented Data From Being Used in the Product):							
Screening Category	Data Download	Overview Tables	Inventory Tables	Annual Tables	Seasonal Tables	Standards Tables	Plots (All)
STORET Edit Criteria	yes	yes	yes	yes	yes	yes	yes
Date	yes	yes	yes	yes	yes	yes	yes
Station Type	yes	yes	yes	yes	yes	yes	yes
Phase 0 Parameter	yes	yes	yes	yes	yes	yes	yes
Phase 1 Parameter	no	no	yes	yes	yes	yes	yes
Media Type	no	no	yes	yes	yes	yes	yes
Remark Codes	no	no	yes	yes	yes	yes	yes
Composite Type	no	no	yes	yes	yes	yes	yes
Phase 2 Parameter	no	no	no	no	no	no	yes
Observations/Period of Record	no	no	no	yes	yes	no	yes

#### Date Screen

Every water quality observation in STORET typically has a sampling date associated with it. Unfortunately, STORET does not prevent users from entering incorrect dates. Consequently, any water quality observation with an incorrect and/or suspect date (eg. a month greater than 12; a day greater than 31; or a sample date later than the STORET retrieval date) were discarded.

#### Station Type Screen

STORET contains data from a wide variety of stations classified by the type of waterbody in which samples were collected. As this project's purpose was to inventory and analyze surface-water quality, the following surface-water station types were retrieved (clarification provided in parentheses):

##### Station Types Included In Retrieval

- (a) STREAM
- (b) CANAL
- (c) LAKE
- (d) RESERV (Reservoir)
- (e) SPRING
- (f) FWTLND (Fresh Water Wetland)
- (g) SWTLND (Salt Water Wetland)
- (h) ESTURY (Estuary)
- (i) OCEAN

Ground water and/or other station type data may have been retrieved if the entering agency classified the station type incorrectly. Rectifying this error was beyond the scope and resources of this project.

### Phase 0 Parameter Screen

Nearly all water quality parameters associated with each station type listed above were retrieved. The only exception to this was the exclusion of most of the STORET administrative parameters. A complete list of STORET administrative parameters is included in Appendix D. The few administrative parameters that were included in the retrievals are as follows:

<u>Code</u>	<u>STORET Administrative Parameter Description</u>
00027	Code No. for Agency Collecting Sample
00028	Code No. for Agency Analyzing Sample
00063	Sampling Points, Number of In a Cross Section
00111	Ratio of Fecal Coliform to Fecal Streptococci
00115	Sample Treatment Code (1=Raw, 2=Treated)
34772	NPDES Number, Cross Reference
45580	Method of Analysis
74065	Stream Flow Class
74066	Annual Runoff
74067	Soil Classification
74068	Water Quality Designated Use Classification

### Phase 1 Parameter Screen

Some of the data retrieved from STORET was not suitable for statistical or graphical analysis. Consequently, this screening criterion eliminated all parameters which were not suitable for statistical or graphical analysis within the context of this project. The full list of these parameters is presented in Appendix E. Examples of parameters excluded from statistical and graphical analysis include the administrative parameters mentioned above, land use acreage, encoded values, dates, latitude/longitude, etc. Excluded parameters do, however, appear in the Parameter Period of Record and Station/Parameter Period of Record (two of the "Overview" Tables), as well as in the water quality parameter file included on disk(s) accompanying this report.

### Media Type Screen

Water quality samples can be taken in a variety of aqueous media. Water quality data were retrieved from STORET only if the media were WATER or VERT (vertically integrated). WATER and VERT samples comprise the overwhelming majority of samples in STORET. The media screen eliminated the following water quality sampling media:

<u>Media Screen</u>	<u>Description</u>
BOTTOM	Sampled At the Bottom
DREDGE	Sampled By Dredge
PORE	Pore Sample
CORE	Core Sample

### Remark Code Screen

STORET enables the agency collecting water quality samples to provide a qualifying remark for each parameter observation. These remarks provide additional information about the measured or observed value entered into STORET (See Appendix B - Parameter Data File for a complete listing and description of all remark codes). Based on the STORET remark codes, two potential screens were applied to water quality observations based on whether the measured value was used in subsequent analyses: (1) Elimination or (2) Modification/Inclusion.

*Elimination:*

Non-composite water quality parameters with the remark codes presented in Table B were eliminated from the period of record, annual, and seasonal descriptive statistics and graphics. Not including observations with these remarks was justified by the fact that most of the remarks: (A) indicate either less confidence in the measured value; (B) are remarks for nominal or categorical data that doesn't lend itself to statistical analysis; or, (C) complicate the statistical analysis beyond the scope of this effort. Observations containing these remark codes comprise a very small fraction of the data. Although statistical analyses weren't undertaken on this data, all water quality observations, regardless of remark code, are included on disk(s) accompanying this report. If you re-analyze this data in order to replicate the results presented here, be sure to eliminate all non-composite observations with the remark codes presented in Table B.

Table B. Non-composite Parameters With the Following Remark Codes Were Eliminated From Statistical and Graphical Analysis:	
Remark Code	Description of STORET Remark Code
F	Female Species.
J	Estimated, Not the Result of Analytic Measurement.
M	Presence Verified, But Not Quantified, Below Quantification Limit. For Species, Male. For Oxygen Reduction Potential, Indicates Negative Value.
N	Presumptive Evidence of Presence.
O	Analysis Lost.
V	Analyte Was Detected In Sample and Method Blank.
W	Less Than Lowest Value Reportable Under Remark "T".
Z	Too Many Colonies Were Present to Count (TNTC), Value Represents Filtration Value.

*Modification/Inclusion:*

Water quality parameter observations with the remark codes presented in Table C were halved prior to inclusion in period of record, annual, and seasonal descriptive statistics and graphics. These remark codes deal with observations that were below the detection limit for the parameter. The common water quality data analysis convention for these remark codes is to use half of the detection limit in statistical analyses (Ward, Loftis, and McBride 1990; Gilbert 1987). Although this is a somewhat defensible treatment of observations below the detection limit, the statistics that may be computed using these halved values may not be defensible. Consequently, any computed statistics in inventory, annual, or seasonal tables that are comprised of 50% or more K, T, and U remark codes are footnoted "Computed with 50% or more of the total observations as values that were half the detection limit." This will provide the user with some caution in using and interpreting these results. Water quality data included on disk(s) accompanying this report that may have these remark codes are stored as the original entry (detection limit). If you re-analyze this data in order to replicate the results presented here, be sure to substitute half the detection limit value in the database whenever these remark codes are encountered.



Table C. The Value of Water Quality Parameters With the Following Remark Codes Were Halved (Half of the Detection Limit Entered In STORET) Prior to Inclusion In Descriptive Statistics and Graphics:	
Remark Code	Description of STORET Remark Code
K	Off-scale Low, Actual Value Not Known, But Known to Be Less Than Value Shown.
T	Less Than Detection Criteria.
U	Analyzed For But Not Detected, Value is Detection Limit For Process Used. If Species, Undetermined.

#### Composite Type Screen

Sometimes data entered in STORET represent something other than a single measurement at one location at one point in time. These samples are typically referred to as composite samples due to the fact that they vary temporally and spatially. Consequently, the observation entered into STORET for composite data is typically a computed value that summarizes the data over time and/or space. Such data complicate statistical and graphical analyses and must be handled separately. Such treatment was beyond the scope of this study; although composite values typically represent only a fraction of STORET observations. The composite type screen eliminates all composite observations from statistical and graphical analyses, except those with a composite type code of "A" that have a one day or less sampling period and those with a composite type code "D". All water quality observations, regardless of composite type code, are included on disk(s) accompanying this report. If you re-analyze this data in order to replicate the results presented here, be sure to exclude all composite observations except those with a code of "A" that have a one day or less sampling period and those with a code of "D". Table D presents a list of possible STORET composite type codes.

Table D. Possible STORET Composite Type Codes	
Composite Type Code	STORET Composite Type Description
A	Average
H	Maximum
L	Minimum
N	Number of Observations
#	Number of Observations
S	Standard Deviation
U	Sum of Squares
V	Variance
C	Coefficient of Error
X	Coefficient of Variance
E	Skewness
F	Kurtosis
Z	Number of Obs. That Exceed An Established Limit
%	Precision
\$	Accuracy
B	N/A
D	Indicates Replicate Sample

### Phase 2 Parameter Screen

Due to budgetary limitations, the number of graphical plots (time series, annual and seasonal box-and-whiskers) produced had to be manageable - typically no more than 100 total plots. After scrutinizing the results of the pilot tests and the Baseline Water Quality Data Inventory and Analysis Reports produced for the first group of parks, the 19 parameters which, typically, were the most frequently measured at nearly all stations were water temperature, stage, discharge, and various meteorological measurements (See Table E). Consequently, most of the graphical plots produced would be of water temperature, stage, discharge, and meteorological conditions. Although these are important parameters, particularly in conjunction with other water quality parameters, it was felt that plotting resources would be better allocated to other water quality parameters. Consequently the STORET parameter codes listed in Table E never generated graphical plots. It is important to note, however, that these parameters are included in all other aspects of the project, including all applicable period of record, annual, and seasonal descriptive statistics tables.

Table E. Frequently Measured STORET Codes That Were Prevented From Generating Plots	
STORET Parameter Code	STORET Parameter Description
00003	Sampling Station Location, Vertical (Feet)
00010	Water Temperature (Degrees Centigrade)
00020	Temperature, Air (Degrees Centigrade)
00021	Temperature, Air (Degrees Fahrenheit)
00025	Barometric Pressure (MM of HG)
00032	Cloud Cover (Percent)
00035	Wind Velocity (Miles Per Hour)
00036	Wind Direction in Degrees from Trun N (Clockwise)
00040	Wind Direction (Azimuth)
00045	Precipitation, Total (Inches Per Day)
00046	Precipitation, Total (Inches Per Week)
00052	Humidity, Relative (Percent)
00061	Stream Flow, Instantaneous (CFS)
00065	Stream Stage (Feet)
81903	Depth of Bottom of Water @ Sample Site (Feet)
82553	Rainfall In 1 Day Inclusive Prior to Sample (Inches)
82554	Rainfall In 7 Days Inclusive Prior to Sample (Inches)
82371	Rainfall In 3 Days Inclusive Prior to Sample (Inches)
82372	Rainfall In 14 Days Inclusive Prior to Sample (Inches)
85599	Precipitation, Total/Period-Rain Equivalent (Cm/Sample)

#### Observations/Period of Record Screen

Despite never plotting water temperature, stage, discharge, and meteorological measurements, the number of plots generated by some parks still exceeded the 100 plot limit. Also, some rationale was needed to plot only those parameters with sufficient data density to make a meaningful statistical graphic. For example, time series plots comprised of only a few observations or annual or seasonal box-and-whiskers plots with limited observations and/or data in only one or two years or seasons are not very informative. Consequently, a number of plotting criteria were developed to limit the number of time series and box-and-whiskers plots to, at most, 100 informative graphics by using each parameter's number of observations and period of record. Similar, albeit less stringent criteria, were used for including results of annual and seasonal analyses in descriptive statistics tables. Consequently, there are more summaries of annual and seasonal results in tables than in graphics. Whenever an entry in an annual or seasonal table generated a plot, this entry was footnoted to notify the reader of the presence of the graphic. Due to differing quantities of data at parks, different screening criteria were employed. The same

criteria for appearance in seasonal and annual tables were used for all parks. Table F presents the least stringent plot screens.

Table F. Least Stringent Plot Screening Criteria Used to Limit the Number of Plots Generated

<p>Time Series:</p> <p>To generate a time series plot, a station/parameter combination must have a period of record of at least 2 years and a total of at least 8 observations.</p> <p>Annual Analysis:</p> <p>To generate an annual box-and-whiskers plot, a station/parameter combination must have at least 9 observations in each of at least 4 years. The years do not have to be consecutive.</p> <p>Seasonal Analysis:</p> <p>To generate a seasonal box-and-whiskers plot, a station/parameter combination must have at least 9 observations in each of 2 seasons and a period of record of at least 6 years and observations in at least 3 of the 6 years. The years do not have to be consecutive.</p>
--

The exact three plot screens used varied by park unit and are documented in the Overview section of the Water Quality Results chapter. If your park's plotting criteria deviated from these least stringent criteria, it is because too many plots would have been generated using these criteria.

The criteria used for appearance of station/parameter combinations in annual and seasonal analysis tables are presented in Table G. These tabular criteria, which are actually the least stringent plotting criteria, were constant from park to park.

Table G. Criteria Used for Generating Entries in Annual and Seasonal Analysis Tables

<p>Annual Analysis:</p> <p>For an entry to appear in an annual table, a station/parameter combination must have at least 9 observations in each of at least 4 years. The years do not have to be consecutive.</p> <p>Seasonal Analysis:</p> <p>For an entry to appear in a seasonal table, a station/parameter combination must have at least 9 observations in each of 2 seasons and a period of record of at least 6 years and observations in at least 3 of the 6 years. The years do not have to be consecutive.</p>
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## Statistical Definitions

Since this report is intended only to characterize historical and/or existing water quality at the park rather than address specific water quality problems, only simple descriptive statistics are presented. Inferential and non-parametric statistical analysis to examine relationships and trends were beyond the scope of the study. The complete water quality dataset is provided on disk accompanying this report to afford the opportunity for more detailed exploratory data analysis. The descriptive statistics are included in the inventory, annual, and seasonal tables. Table H provides a brief definition of each descriptive statistic provided for each parameter at a station.

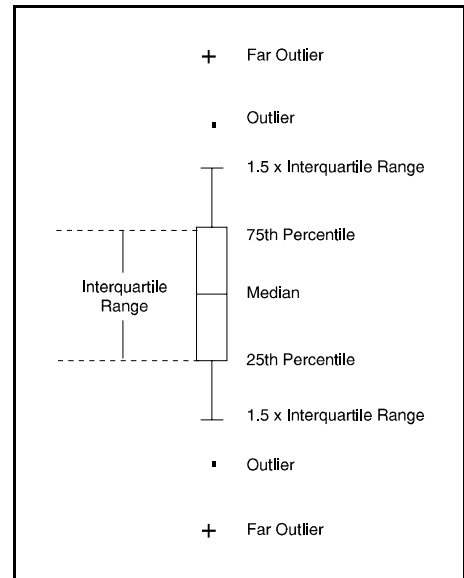
Table H. Definition of Descriptive Statistics Contained in Inventory, Annual, and Seasonal Tables

Observations:	The number of samples collected.
Median:	The median is the 50th percentile or the value in a dataset sorted in ascending order that exceeds 50% of all observations, yet is also exceeded by the remaining 50% of all observations.
Mean:	The sum of all observations collected divided by the number of observations.
Maximum:	The maximum value observed.
Minimum:	The minimum value observed.
Variance:	This is a measure of variability or dispersion of the observations; or, in other words, describes how many observations are close (or far), from the mean. It is calculated as the weighted average of the squared deviations from the mean.
Standard Deviation:	The positive square root of the variance.
10th Percentile:	The value in a dataset sorted in ascending order that exceeds 10% of all observations, yet is itself exceeded by the remaining 90% of all observations.
25th Percentile:	The value in a dataset sorted in ascending order that exceeds 25% of all observations, yet is itself exceeded by the remaining 75% of all observations. The 25th percentile is also known as the first quartile.
75th Percentile:	The value in a dataset sorted in ascending order that exceeds 75% of all observations, yet is itself exceeded by the remaining 25% of all observations. The 75th percentile is also known as the third quartile.
90th Percentile:	The value in a dataset sorted in ascending order that exceeds 90% of all observations, yet is itself exceeded by the remaining 10% of all observations.

As with the tabular descriptive statistics, the scope of the project limited the generation of exploratory graphics to time series plots and annual and seasonal box-and-whiskers plots. Plots were only generated, however, provided the parameter met or exceeded the relevant plotting criteria specified in the previous section.

Time series plots display the parameter concentration on the Y-axis and the date on the X-axis. This provides the user with a visual feeling for not only the parameter's concentration and variability over time, but also the density of data in different time periods. The time series plots provide a visual representation of the data in the basic station inventory. Due to software limitations, a line connects each measured value in sequence regardless of the time period between samples. Readers are cautioned not to assume that the concentration of the parameter between any two data points can be represented by a straight line. It is likely that the concentration varied between any two observations, particularly if the observations are separated by a significant time period.

The annual and seasonal box-and-whisker plots provide a graphical overview of the measured data and give the user a better understanding of the data's distribution and possible outliers. In essence, the box-and-whisker plots provide a visual representation of the data contained in the annual and/or seasonal tables. The interpretation of the boxes is provided in the figure to the right. Each box encompasses the middle 50 percent of measured values (from the 75th to 25th percentiles). The difference between the 75th and 25th percentiles is also known as the interquartile range. The horizontal line inside each box is the median or 50th percentile. The lines which extend out from each end of the box are the whiskers. The whiskers extend out from first quartile (25th percentile) and third quartile (75th percentile) to the smallest data point within 1.5 interquartile ranges from the first and third quartiles. Observations that extend beyond the whiskers are known as outliers. Far outliers are observations whose values lie more than three interquartile ranges below the first quartile or above the third quartile. These are designated with plus signs.



## **INTERPRETIVE GUIDE TO WATER QUALITY RESULTS**

This interpretive guide discusses each of the products presented in the next chapter - Water Quality Results. This chapter highlights how each of the tables and figures were prepared and how they can be used. Each subheading in this chapter corresponds to a particular product in the subsequent Water Quality Results chapter.

### **Overview**

The Overview provides a brief one-page summary of the results of the various database retrievals for both the study area and the park. The study area results include the park results since the study area encompasses the park and all lands and waters within at least 3 miles upstream and 1 mile downstream of the park. Thus, the GIS estimated acreage of the study area should always be greater than the park acreage. The park acreage was computed from the digital boundary that was obtained for the park. More than likely this acreage will differ, perhaps significantly, from the "official" published acreage for the park due to the spatial and temporal accuracy of the digital boundary, treatment of inholdings, and other concerns. The number of STORET stations is the number of locations within the study area and park where an agency monitored (or intended to monitor) water quality. The number of stations with no data reveals the number of stations created in STORET for which water quality data were never entered. The number of stations with no statistical analysis reports the number of stations in the study area and park that contain data not amenable to normal parametric statistics. The number of longer term stations indicates the number of stations in the study area and park with at least 6 parameters having periods-of-record extending 2 years with an average of at least 1 observation per year over the period-of-record. The date of STORET retrieval is the calendar date when Horizon Systems downloaded all the data from STORET. Thus, the report documents all data entered in STORET prior to the retrieval date. Keep in mind that an agency can upload archival data at any time. Consequently, a retrieval date only guarantees that as of that date, this report contains all the data that had been entered into STORET. The period of record is the earliest date for which water quality data exist in STORET for the study area and park up to the date when the most recent data were entered prior to the retrieval date. The number of parameters measured is the number of unique water quality parameters measured within the study area and park and entered in STORET. The number of water quality observations is the sum of the total number of observations across all parameters within the study area and park. The number of industrial/municipal facilities discharges, drinking water intakes, water gages, and water impoundments are the number of each of these entities found within the study area and park. The number of time series, annual, and seasonal plots are the number of these different types of graphics produced by station/parameter combinations within the study area and park using the plotting criteria described in the previous chapter. The hydrologic seasons, described below, are the seasons used for the seasonal water quality data analysis. The time series, annual, and seasonal criteria are the plot and tabular screening criteria described in the previous chapter.

### **Regional Location Map**

The Regional Location Map provides a small scale, general representation of the park and study area location within the United States. Digital, reproducible copies of this graphic are included on the disk(s) accompanying this report.

### **Water Quality Monitoring Locations Map(s)**

The Water Quality Monitoring Locations Map(s) usually provides a larger scale representation of the park and study area than the Regional Location Map. This map indicates the locations within the study area where water quality has been monitored and the data entered into STORET. The water quality monitoring stations are labelled sequentially with the rightmost significant digits. The station names were assigned in numerically ascending order by latitude (for parks with a greater north-south extent than east-west) or longitude (for parks with a greater east-

west extent than north-south). Thus, this map serves as a visual index to the water quality data contained in the report. Since the 1:100,000 scale hydrography (from the River Reach File Ver. 3.0 or other sources) is displayed on the map, users can refer to the map to locate the station number on the reach in which they are interested and then find the appropriate section in the report that documents the water quality at that station. If the scale allows, USGS catalog units are also displayed on the map to provide an approximation of drainage basins. More than one Water Quality Monitoring Location map may be presented if the scale requires breaking the area into multiple maps for legibility. If multiple maps are necessary, an index map showing the geographic extent of each sub-map or panel will be present. Digital, reproducible copies of this graphic are included on the disk(s) accompanying this report. The digital, geo-referenced data files documented in Appendices A and B will allow the park to create water quality monitoring stations as a coverage in their GIS.

### **Dischargers, Drinking Intakes, Gages, and Impoundments Map(s)**

The Dischargers, Drinking Intakes, Gages, and Impoundments Map(s) displays the same information as the Water Quality Monitoring Location Map(s) except the water quality stations are replaced by industrial/municipal facilities discharges, drinking water intakes, active and inactive gage locations, and water impoundments. This map also serves as a visual index allowing the user to determine the identification code of each discharger, drinking intake, gage, or impoundment. This number can then be used to obtain additional information about the entity on the following page of the report or to refer to the more detailed database files accompanying the report on disk. These more detailed database files are geo-referenced (See Appendices A and B), thus allowing the park to create these coverages in their GIS. More than one Dischargers, Drinking Intakes, Gages, and Impoundments map may be presented if the scale requires breaking the area into multiple maps for legibility. If multiple maps are necessary, an index map showing the geographic extent of each sub-map or panel will be present. Digital, reproducible copies of this graphic are also included on the disk(s) accompanying this report.

### **Industrial Facilities Discharges, Drinking Water Intakes, Water Gages, and Water Impoundments Table**

This table provides some additional information about each of the discharges, drinking intakes, water gages, and water impoundments displayed on the previous map(s). This information generally includes the site identification number; the station or facility name; an address or some other indication of location; and some other pertinent information. More detailed information about each of these entities is contained in the database files on disk accompanying the report (See Appendices A and B).

### **Representative Mean Annual Hydrograph for Seasonal Analysis**

One component of the water quality data analysis contained in the document is a seasonal analysis of the data (where adequate data exist). In order to undertake this analysis, some representation of the park's seasons was required. Seasons can be based on many factors (eg. hydrologic, climatic, recreational use, etc.). Since project resources did not allow us to contact every park and discuss with resource management staff what appropriate seasons may be for the park, WRD staff elected to adopt primarily a hydrologic/climatic definition of the seasons which uses a process of hydrograph separation to glean seasons from stream discharge patterns. The procedure employed to make these determinations was as follows:

- (1) Find the nearest USGS Hydro-Climatic Data Network (HCDN) station (U.S. Geological Survey 1992) to the park that is most representative of streamflow conditions at the park. The HCDN is basically a subset of USGS streamflow stations, including only those stations that are unaffected by artificial diversions, storage, or other disruptions of the natural channel. All HCDN stations generally have at least a 20 year period of record. Consequently, discharge patterns at these stations should reflect only hydrologic and climatic influences. For the most part, selected HCDN sites were typically within 15-20 miles of the park. In some parks where WRD staff were aware of the existence of a stream gage located within the park that would be more representative of park waters even though it wasn't an HCDN site, this gage was selected.



- (2) Retrieve the daily discharge values for the selected station from the USGS Daily Values File and generate a mean annual hydrograph and a box-and-whiskers plot of daily flows by month.
- (3) Interpret the plots based on our knowledge of the hydrologic regime at these parks and assign seasons.

This approach, used for the majority of parks, assumes that most water quality data at the park will be found in streams and that the discharge pattern of the selected stream is representative of the seasons for all park waterbodies. Although this assumption may be weak for certain parks, project resources did not allow a more thorough investigation. For parks where there wasn't any stream gage (HCDN or otherwise) deemed representative of park waters, precipitation records from a nearby meteorological station were obtained from the National Climatic Data Center. Plotting daily average precipitation and box-and-whiskers of monthly precipitation sums allowed WRD hydrologists to make a rough approximation of climatic seasons for use in analyzing the water quality data.

Again, it is important to note the many ways of defining "seasons" and thus the limitations of the seasonal analysis contained in this document. For certain parks it may be more useful to perform a seasonal analysis with seasons defined by recreational use patterns or some other natural or anthropogenic factor. This option is available to the park since all the water quality data analyzed in this document is contained on disk(s) accompanying this report. Digital, reproducible copies of this seasonal analysis graphic are also included on the disk(s) accompanying this report.

### **Contacts for Agency Codes Retrieved**

This table provides a list of the organizations who have entered data into STORET. A contact name at the organization and a phone number are also supplied. The agency code in the first column is the key for identifying which stations belong to that agency. This code will appear in the first line of each station's inventory. Although the agencies listed in this table are potential partners for future water quality monitoring or management endeavors, don't be surprised if the name of the contact and/or the telephone number is out of date. This information is entered when an agency first creates a station. The agency may not update this information when the initial contact moves on or the telephone number changes. Nonetheless, it is likely that the contact or someone else at the agency may be able to provide you with project reports or other information relative to the agency's data. A digital copy of this table accompanies this report on disk (See Appendices A and B).

### **Quantity of Data Retrieved by Agency Code**

This table displays the period-of-record; numbers of water quality stations, longer-term stations, and stations without data; total number of water quality observations; and the number of unique water quality parameters measured by each agency within the study area and park boundary. Using this table, a park can quickly determine which agencies collect the most data in and around the park and whether they have monitored recently. A digital copy of this table accompanies this report on disk (See Appendices A and B).

### **Station Period of Record Tabulation**

The Station Period of Record Tabulation provides a quick overview of the names of all the stations within the study area where water quality has been monitored and data entered into STORET. It also furnishes the total number of observations taken at each station and the frequency of observations between certain dates: (1) 01/01/85 until the most recent date data were measured; (2) 01/01/75 - 12/31/84; and (3) prior to 01/01/75. The station identification number, the four character park abbreviation code followed by a four digit number, provides the means to jump from a particular station in the table to the statistical and graphical analyses for this station contained in the Station-By-Station Results section. The Station Period of Record Tabulation reveals which water

quality stations were situated within the park as defined by the park's GIS boundary. The Station Period of Record Tabulation also footnotes longer-term water quality stations. Longer-term stations are those that have at least 6 parameters with an average of one or more observations per year for those parameters during a period of record extending at least two years. Note that although a station may not be flagged as longer-term, it can still harbor much important data (albeit for only a few parameters or over a very long term with just a few observations). A digital copy of this table accompanies this report on disk (See Appendices A and B).

### **Parameter Period of Record Tabulation**

The Parameter Period of Record Tabulation provides a complete listing of every water quality parameter ever measured in the study area and entered into STORET. This table is a summation of all the water quality observations for each parameter across all stations in the study area. Like the Station Period of Record Tabulation, the total number of observations for each parameter and the frequency of observations between: (1) 01/01/85 until the most recent date data were measured; (2) 01/01/75 - 12/31/84; and (3) prior to 01/01/75 are provided. This table is handy for quickly assessing whether particular parameters have been measured in the study area. The Parameter Period of Record Tabulation also shows how many in-park (and total) water quality stations contained data for each parameter. Some administrative parameters and parameters not suitable for statistical analysis within the context of this project (as discussed in the Screening Methodologies and Procedures section of the Methodology chapter) are listed in the Parameter Period of Record Tabulation, but not in the Station-By-Station Results section. A digital copy of this table accompanies this report on disk (See Appendices A and B).

### **Station/Parameter Period of Record Tabulation**

The Station/Parameter Period of Record Tabulation combines the information found in the Station Period of Record Tabulation and the Parameter Period of Record Tabulation. This table provides a listing of all the stations where a particular water quality parameter was measured in the study area and the data entered into STORET. The table provides the start and end dates of the period of record of each parameter at each station; the number of years of measurement (computed from the start and end dates); whether the station/parameter combination occurred within the park boundary; the total number of observations for each parameter at each station, and whether a time series (T), annual (A), and/or seasonal (S) plot was generated for the station/parameter combination in the Station-By-Station Results section. This table is very useful when you need to determine at which locations within the study area (or park) particular parameters were monitored and how much data was collected there. Some administrative parameters and parameters not suitable for statistical analysis within the context of this project (as discussed in the Screening Methodologies and Procedures section of the Methodology chapter) are listed in the Station/Parameter Period of Record Tabulation, but not in the Station-By-Station Results section. A digital copy of this table accompanies this report on disk (See Appendices A and B).

### **Station-By-Station Results**

Probably the most voluminous portion of the document is the Station-By-Station Results. Here the results of the water quality analyses for each station are presented in sequence. The results include the station inventory; parameter inventory; EPA water quality criteria analysis; and, as applicable, time series graphics and annual and seasonal tables and box-and-whiskers graphics. Each of these products are discussed below.

### *Station Inventory for Station*

Each station's data commences with its Station Inventory. The Station Inventory provides the descriptive attributes about each water quality monitoring station contained in STORET. This includes a variety of locational information such as a verbal description, the Federal Information Processing codes for county and state, latitude and longitude, and other items; the station type (stream, spring, estuary, etc.); monitoring agency; creation date; indices to the River Reach File; whether the station lies within the park boundary; and several other attributes. This water quality station location data is also contained on disk(s) accompanying the report (See Appendices A and B).

### *Parameter Inventory for Station*

Following the descriptive attributes about a station is the Parameter Inventory for the station. The Parameter Inventory provides a complete inventory and descriptive summary of all the water quality parameter data for the station. This table furnishes the parameter STORET code and name; the period of record for this parameter at this station; and the descriptive statistics defined in the Statistical Definitions in the previous chapter. Three different footnotes can appear on a parameter's descriptive statistics. Two asterisks (\*\*) in the 10th, 25th, 75th, or 90th percentile columns indicates that there was insufficient data to compute these statistics for this parameter. Percentiles were not computed unless the parameter had at least 9 observations. Two number signs (##) next to the number of observations indicates that more than 50 percent of the observations entered into the computations as values that were taken to be half the detection limit. Caution should be employed in interpreting and using statistical results when more than half the values are set to half the detection limit. The letter "p" following a numeric STORET parameter code in the Parameter Inventory indicates that a time series plot was produced for this parameter at this station. Digital, reproducible copies of the Parameter Inventory tables are contained on the disk(s) accompanying this report.

Two downloaded parameter groups, pH and bacteriological, received special treatment whenever descriptive statistics were computed in the Parameter Inventory (as well as subsequent annual and seasonal tables). Whenever pH appears in a descriptive statistics table, the entry is increased to 3 entries: (1) the original pH entry; (2) pH computed from conversion to and from  $\mu\text{eq/l H}^+$ ; and (3)  $\mu\text{eq/l H}^+$ . The reason for these conversions is that pH is actually the negative logarithm of the hydrogen ion concentration. To be technically correct in computing descriptive statistics, pH values must be converted to  $\mu\text{eq/l H}^+$  (Kunkle and Wilson 1984). Once the descriptive statistics are computed using the pH values expressed as  $\mu\text{eq/l H}^+$ , the results can be converted back to pH. The three pH entries in the descriptive statistics table will all have the same STORET code.

Whenever a bacteriological parameter appears in a descriptive statistics table, the entry is increased to 3 entries: (1) the original bacteriological entry; (2) an entry computed using the log of each measured value; and (3) an entry that simply reports the geometric mean. The reason for converting to logs and displaying the geometric mean is convention. Bacteriological water quality standards typically reference the geometric mean rather than the arithmetic. The three bacteriological entries in the descriptive statistics tables will all have the same STORET code.

### *EPA Water Quality Criteria Analysis for Station*

The EPA Water Quality Criteria Analysis table follows the Parameter Inventory. This table presents a comparison between the station's STORET water quality data and applicable national water quality criteria for freshwater and marine aquatic organisms; drinking water; and other concerns. Comparison against applicable State water quality criteria was not feasible given project resources. Appendix F provides the relevant national EPA water quality criteria values. In most cases, the EPA water quality criteria values are single sample concentrations that can be directly compared to single sample STORET entries. There are, however, two notable exceptions to this single sample/single value comparison: ammonia and fecal-indicator bacteria. For these two parameters, criteria are either derived from or depend on the results of other chemical characteristics of the water or require a time series statistical treatment of multiple samples to determine whether the criterion has been exceeded. The EPA ammonia criterion is pH and temperature dependent. To calculate the criterion for each ammonia sample value was beyond

the scope of this project. Consequently, ammonia criteria were not included in Appendix F or the EPA Water Quality Criteria Analyses. Un-ionized ammonia criteria can be determined from formula table values included in the EPA Silver Book (Environmental Protection Agency 1995).

For the purposes of this project, fecal-indicator bacteria data were flagged as exceeding criteria when their concentrations exceeded 200, 1000, 126, and 33 (fresh)/35 (salt) colony forming units or most probable number for single samples of fecal coliform, total coliform, E. coli, and enterococci, respectively. These values represent only approximations of the criteria for primary contact recreation waters where criteria are typically expressed in terms of a geometric mean computed with no less than 5 samples during a given month. When a fecal-indicator bacterial observation exceeds a criterion in the EPA Water Quality Criteria Analysis section, the reader should refer to the corresponding geometric mean calculations in the preceding Parameter Inventory. Long-term geometric means that exceed the respective water quality criteria for multiple samples are more indicative of chronic bacteriological problems than single sample values.

Water quality observations carrying non-detection or below-detection limit remark codes (K, T, and U) required special treatment in the EPA Water Quality Criteria Analysis. As with the statistics in the Parameter Inventory, half the detection limit was the value used in the EPA Water Quality Criteria Analysis. For certain observations, however, half the detection limit may exceed a water quality criterion. For those observations it would be inappropriate to classify them as exceeding a criterion since the actual value wasn't known. Thus, it was decided that any below detection limit or non-detect observations that exceed a water quality criterion using half the detection value would be excluded from the EPA Water Quality Criteria Analysis. If non-detect or below detection limit values are excluded from the EPA Water Quality Criteria Analysis for a particular parameter, the total observations for that parameter will be footnoted with an ampersand (&). This will also explain the difference between the total observations in the Parameter Inventory and the EPA Water Quality Criteria Analysis. Non-detect or below detection limit values are included in the EPA Water Quality Criteria Analysis, however, if half the detection limit doesn't exceed the parameter's criterion.

The EPA Water Quality Criteria Analysis for each station lists the parameter; the standard type and value; the total number of observations for the parameter at this station; the number of observations that exceeded the standard value; and the proportion of observations that exceeded the standard value. Water quality observations are considered as having exceeded a criterion regardless of whether the criterion represents a maximum acceptable value or a minimum acceptable value. The table also breaks down the water quality criteria analysis on a seasonal basis to allow the reader to discern whether parameter observations tend to exceed criteria during only certain seasons or year round. Although the EPA Water Quality Criteria Analysis table is a good starting point for assessing potential water quality problems at the station, the reader is strongly encouraged to read the caveat section in the Introduction concerning drawing conclusions about water quality problems from this table. Digital, reproducible copies of these tables accompany the report on disk (See Appendices A and B).

#### *Time Series Plots for Station*

Following the EPA Water Quality Criteria analysis will be any Time Series Plots for each parameter that met the time series plot screening criterion selected for the park unit. If a time series plot is generated for a particular parameter at a station, a "p" will appear next to the STORET parameter code in the Parameter Inventory. If no time series plots are present for the particular station, the data did not meet the time series screening criterion listed in the Overview section of the Water Quality Results chapter. The x-axis on these plots is the period of record, listing only the 2-digit calendar year for clarity (i.e. 1983 is presented as 83). The y-axis is the concentration of the selected parameter in its measurement units. In general, the units for a given parameter are given either on the y-axis or in the parameter description in the subtitle of the graph. Subtitle and/or y-axis parameter descriptions may be truncated on the plots so as to not exceed the maximum number of plotting characters. Y-axis values less than zero are sometimes shown for better representation of the entire plot. The station identification code, parameter description, and parameter STORET code are presented in the main title. The footnote provides a descriptive location name. Observations on the plot are represented as squares. Lines are drawn connecting each successive observation. As mentioned previously in the Statistical Definitions section of the Methodology chapter, the interconnecting line is drawn only for ease of reading and provides no indication of what the actual parameter

values were between the two observed measurements. Digital, reproducible copies of all time series plots accompany the report on disk (See Appendices A and B).

For time series plots of pH, the original pH values are plotted. For time series plots of bacteriological data, the log of the measured value is plotted. Hence, the y-axis of a time series plot for bacteriological parameters is log-linear.

#### *Annual Analysis for Station*

If more than 9 observations exist in each of at least 4 years for a particular parameter at a station, an Annual Analysis table will be generated. Entries will be made in the table for each parameter having more than 9 observations in each of at least 4 years. The Annual Analysis presents the same descriptive statistics as the Parameter Inventory table, except that it provides the statistics by year, rather than the entire period of record. Although some of the years may not contain 9 observations, these years still have an entry in the table. A parameter needs only to have 9 observations in any 4 years of its period of record to qualify for the Annual Analysis table. Like the Parameter Inventory, percentiles with fewer than 9 observations are not computed and entries computed with greater than 50 percent of the data values set to half the detection limit are flagged. Entries in the Annual Analysis table that also meet the annual analysis box-and-whisker plot screening criterion will be flagged with a "p" next to the STORET code. Digital, reproducible copies of these tables accompany the report on disk (See Appendices A and B).

#### *Annual Box-and-Whiskers Plots for Station*

Entries in the Annual Analysis table that meet the annual box-and-whisker plot screening criterion will generate Annual Box-and-Whiskers Plots. The interpretation of box-and-whiskers plots is explained in the Statistical Definitions section of the Methodology chapter. A box is generated for each year of the period of record, even if less than 9 observations were recorded in the year. The axis labeling and plot titling is the same as for the time series plots. Digital, reproducible copies of these graphics accompany the report on disk (See Appendices A and B).

For annual box-and-whiskers plots of pH,  $\mu\text{eq/l H}^+$  are plotted. For annual box-and-whiskers plots of bacteriological data, the log of the measured value is plotted. Hence, the y-axis of an annual box-and-whiskers plot for bacteriological parameters is log-linear.

#### *Seasonal Analysis for Station*

As explained above, a park's hydrologic seasons for seasonal water quality analysis were determined using a process of hydrograph separation and other techniques. If a parameter has more than 9 observations in each of 2 seasons with a period of record of at least 6 years and observations in at least 3 of the 6 years, a Seasonal Analysis table will be generated for the station. The Seasonal Analysis presents the same descriptive statistics as the Parameter Inventory table, except that it provides the statistics by season, rather than the entire period of record. Although certain parameters for a season at a station may not contain 9 observations, these parameters can still have an entry in the table. A parameter needs only to have 9 observations in each of 2 seasons with a period of record of at least 6 years and observations in at least 3 of the 6 years to qualify for the Seasonal Analysis table. Consequently, some of the parameters could have fewer than 9 observations in a particular season but still generate a table entry. Like the Parameter Inventory and Annual Analysis, percentiles with fewer than 9 observations are not computed and entries computed with greater than 50 percent of the data values set to half the detection limit are flagged. Entries in the Seasonal Analysis table that also meet the seasonal analysis box-and-whisker plot screening criterion will be flagged with a "p" next to the STORET code. Digital, reproducible copies of these tables accompany the report on disk (See Appendices A and B).

### *Seasonal Box-and-Whiskers Plots for Station*

Entries in the Seasonal Analysis table that meet the seasonal box-and-whisker plot screening criterion will generate Seasonal Box-and-Whiskers Plots. The interpretation of box-and-whiskers plots is explained in the Statistical Definitions section of the Methodology chapter. A box is generated for each season of the period of record, even if less than 9 observations were recorded in the season. On the x-axis, the seasons are labeled 1 through the number of seasons defined for the park through hydrograph separation. The actual calendar dates that correspond to these numerically labeled seasons exist in the Overview section and the Seasonal Analysis tables in the Water Quality Results chapter. The axis labeling and plot titling are the same as for the time series and annual box-and-whiskers plots. Digital, reproducible copies of these graphics accompany the report on disk (See Appendices A and B).

For seasonal box-and-whiskers plots of pH,  $\mu\text{eq/l H}^+$  are plotted. For seasonal box-and-whiskers plots of bacteriological data, the log of the measured value is plotted. Hence, the y-axis of a seasonal box-and-whiskers plot for bacteriological parameters is log-linear.

### **EPA Water Quality Criteria Analysis for Entire Park Study Area**

This table essentially summarizes all the individual station-by-station EPA water quality criteria analyses in the study area. (Refer to the EPA Water Quality Criteria Analysis for Station section above for more detailed information on the treatment of special cases in the EPA Water Quality Criteria Analysis for Entire Park Study Area.) This table presents a comparison between the study area's STORET water quality data and applicable national water quality criteria for freshwater and marine aquatic organisms; drinking water; and other concerns. Comparison against applicable State water quality criteria was not feasible given project resources. Appendix F provides the relevant national EPA water quality criteria values. The EPA Water Quality Criteria Analysis for the Entire Park Study Area lists the parameter; the standard type and value; the total number of observations for the parameter at this station; the number of observations that exceeded the standard value; and the proportion of observations that exceeded the standard value. Water quality observations are considered as having exceeded a criterion regardless of whether the criterion represents a maximum acceptable value or a minimum acceptable value. The table also breaks down the water quality criteria analysis on a seasonal basis to allow the reader to discern whether parameter observations tend to exceed criteria during only certain seasons or year round. Although the EPA Water Quality Criteria Analysis for the Entire Park Study Area is a good starting point for assessing potential water quality problems at the park, the reader is strongly encouraged to read the caveat section in the Introduction before drawing conclusions about water quality problems from this table. A digital, reproducible copy of this table accompanies the report on disk (See Appendices A and B).

### **NPS Servicewide Inventory and Monitoring Program**

#### **Level I Water Quality Inventory Data Evaluation and Analysis (IDEA)**

One of the objectives of this Baseline Water Quality Data Inventory and Analysis project is to perform an IDEA - an Inventory Data Evaluation and Analysis - to determine the presence and/or absence of Servicewide Inventory and Monitoring Program "Level I" water quality parameter groups in the park's study area. The Strategic Plan for Conducting Baseline Natural Resource Inventories in the National Park Service (National Park Service 1993) identified the basic water quality parameters displayed in Table I as the parameters that all parks must have for "key" waterbodies (determined on the basis of size, uniqueness, threats, etc.) within park boundaries. Since these parameters can be measured in different ways and with different units, there are multiple STORET codes associated with each parameter; hence the concept of parameter groups. The Strategic Plan distinguishes between those parameter groups required for all parks and parameter groups required only on a case-by-case basis.

The IDEA basically compares the parameters listed in the Parameter Period of Record Tabulation and Station/Parameter Period of Record Tabulation with the "Level I" Servicewide Inventory and Monitoring water quality parameter groups, listed in Table I and in Appendix G, and notes, not only the presence or absence of each parameter group, but the total number of observations for each parameter present in the group; the number of

observations between certain time periods; and the total number of stations within the study area at which the parameter was measured. The total number of different (unique) stations measuring parameters for the group is in parentheses on each parameter group's summary line.

The first page of the IDEA lists the missing Servicewide Inventory and Monitoring Program "Level I" groups. If a parameter group appears on this list, no data for any of the parameters defining the group (See Appendix G) was retrieved for it within the study area. So-called non-priority parameter groups may appear in the missing list. Non-priority parameters are park-specific parameters (case-by-case) which may not be applicable to your park. Consequently, if you believe a particular parameter, not included in IDEA (See Appendix G), to be important for your park, you will have to consult the Parameter and Station/Parameter Period of Record Tabulations to determine the presence or absence of this parameter for the park. Although considered a "Level I" parameter, biological data, obtained through rapid bioassessment or other means, is not considered in this report which deals specifically with surface water chemistry. Following the Missing Level I Group list is the Present Level I Group list which displays the summary results for each Servicewide Inventory and Monitoring "Level I" water quality parameter group that was found.

Table I. Basic "Level I" Water Quality Parameters Identified as Required and Optional By the Servicewide Inventory and Monitoring Program for "Key" Park Waterbodies

<p><u>Required Parameter Groups:</u></p> <p>(1) Alkalinity</p> <p>(2) pH</p> <p>(3) Conductivity</p> <p>(4) Dissolved Oxygen</p> <p>(5) Rapid Bioassessment Baseline (EPA/State protocols, involving fish and macroinvertebrates)</p> <p>(6) Temperature</p> <p>(7) Flow</p> <p><u>Case-By-Case Parameters Groups:</u></p> <p>(8) Toxic Elements</p> <p>(9) Clarity/Turbidity</p> <p>(10) Nitrate/Nitrogen</p> <p>(11) Phosphate/Phosphorus</p> <p>(12) Chlorophyll</p> <p>(13) Sulfates</p> <p>(14) Bacteria</p>
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The last page of the IDEA summarizes the information from the Missing and Present Level I Group lists. This page provides information on the temporal and spatial distributions of the data. Included in this table are the total number of observations for each parameter group; the number of observations since January 1, 1985; the percent of the total observations since January 1, 1985; the number of stations measuring each parameter group; the percent of the total number of stations with data measuring the parameter group; the number of observations per station with data; the period-of-record for this parameter group; and the average number of observations per year of the period-of-record.

In interpreting the results of the IDEA, the reader should first consult the Missing Level I Group list. For the parameter groups listed, there was no baseline water quality data within the study area entered in STORET. Consequently, these parameter groups could be a higher priority for data collection. It is important, however, to realize that data within these parameter groups may have been already collected but not entered into STORET. The resources for this project did not enable us to pursue thorough literature and file cabinet reviews to dredge up

every last iota of data. If data exists for certain Servicewide Inventory and Monitoring Program "Level I" water quality parameter groups in a park's file cabinet, it is the park's responsibility to factor that data into their IDEA. Consequently, the listing of a parameter group on the Missing "Level I" Group list is not a WRD endorsement to launch a study to collect these data. The IDEA is intended to simply note that no data exist for these parameter groups in STORET for the park. It is the park's responsibility to ascertain whether such data has already been collected by the park or other entities before embarking on a new study. In fact, in the future the WRD will require that any park study plan proposing to collect baseline water quality data show that they have consulted their Baseline Water Quality Data Inventory and Analysis report and searched in other locations (file cabinets, published literature, etc.) for the data they propose to collect. A similar interpretation springs from the Present "Level I" Group list. Insufficient data density in certain time periods for particular parameter groups is not necessarily cause for launching a new inventory and/or monitoring program. The park should still consult with other potential sources of data. Again, the IDEA is designed to provide only a quick check on data in STORET for the Servicewide Inventory and Monitoring Program "Level I" water quality parameter groups.

### **Water Quality Observations Outside STORET Edit Criteria for Park**

STORET data entered after November 1983 were subjected to rudimentary edit/bounds checking for 190 common parameters (See the STORET Edit Criteria in Appendix C). None of the data entered into STORET prior to that time has been subjected to edit/bounds checking. Moreover, to maintain exact comparability with USGS WATSTORE data, WATSTORE data entered into STORET has never been subjected to the EPA edit/bounds checking. During the pilot test phase of this project, obviously incorrect data was identified from both USGS and other agency data in STORET. As a consequence, all data downloaded from STORET was filtered through the STORET edit criteria to identify parameter observation values that fall outside any edit criterion ranges. This section documents the station name, parameter, date, time, parameter value, agency, and STORET station name of every observation that fell outside the range of an edit criterion. Not all data falling outside an edit criterion are necessarily incorrect. Such data may represent unique or special conditions. Consequently, every observation falling outside a STORET edit criterion was scrutinized to determine, in our best professional judgement, whether the value was in the realm of possibility or obviously incorrect. Water quality observations that appeared to be obviously incorrect are marked with an "X" in the Disposition column of this table. These values were not retrieved or included in any of the inventory tables or graphs. Water quality values outside a STORET edit criterion but within the realm of possibility were retained and included in inventory tables and graphs. The Water Quality Observations Outside STORET Edit Criteria for Park table documents all values that were outside an edit criterion range. This documentation is also necessitated by the fact that agencies can override the STORET edit criteria for individual observations. Although the edit criteria eliminate some potentially "bad" data from the report, the probability of other incorrect data, for both the 190 parameters that are edit/bound checked and all the other STORET parameters that aren't error checked, is high. Readers should consult the Caveat section in the Introduction for guidelines on the use and interpretation of STORET data. The responsibility for correcting these observations rests with the collecting agency.



## **WATER QUALITY RESULTS**



## OVERVIEW FOR MANA

### Study Area Boundary Description

The study area includes the park and all areas within at least 3 miles upstream of the park unit boundary and at least 1 mile downstream.

	<u>Study Area</u>	<u>Park</u>
GIS Estimated Acreage:	64611	5028
# STORET Stations:	50	13
# Stations With No Data:	1	0
# Stations With No Stat. Analysis:	0	0
# Longer Term Stations:	21	11
Date of STORET Retrieval:	09/21/96	09/21/96
Period of Record:	11/19/52-07/17/96	03/25/75-11/13/94
# Parameters Measured:	381	58
# Water Quality Observations:	45195	8342
# Industrial/Municipal Facilities:	5	0
# Drinking Water Intakes:	0	0
# Water Gages:	8	0
# Water Impoundments:	5	1
# Total Plots:	146	24
# Time Series:	38	0
# Annual:	66	24
# Seasonal:	42	0

### Hydrologic Definition of Seasons:

1. October 1 - March 14
2. March 15 - July 14
3. July 15 - September 30

### Time Series Plot Criteria:

To be included in the time series plots, a station/parameter combination must have at least 12 years and at least 56 observations.

### Annual Analysis Criteria:

To be included in the annual box-and-whisker plots, a station/parameter combination must have at least 9 observations in each of at least 6 years.

To be included in the annual analysis tables, a station/parameter combination must have at least 9 observations in each of at least 4 years.

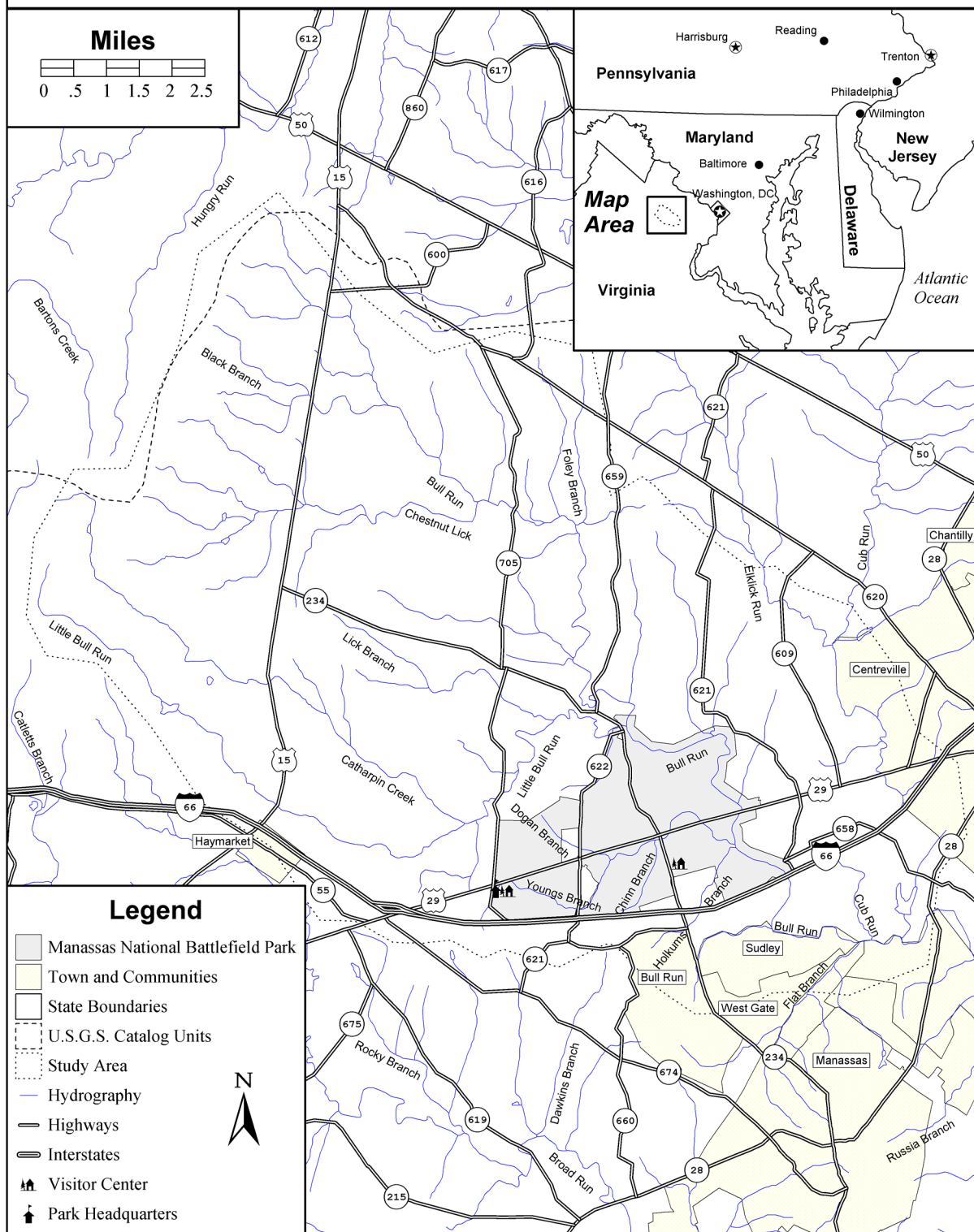
### Seasonal Analysis Criteria:

To be included in the seasonal box-and-whisker plots, a station/parameter combination must have at least 9 observations in each of 2 seasons and a period of record of at least 15 years and observations in at least 4 of the 15 years.

To be included in the seasonal analysis tables, a station/parameter combination must have at least 9 observations in each of 2 seasons and a period of record of at least 6 years and observations in at least 3 of the 6 years.

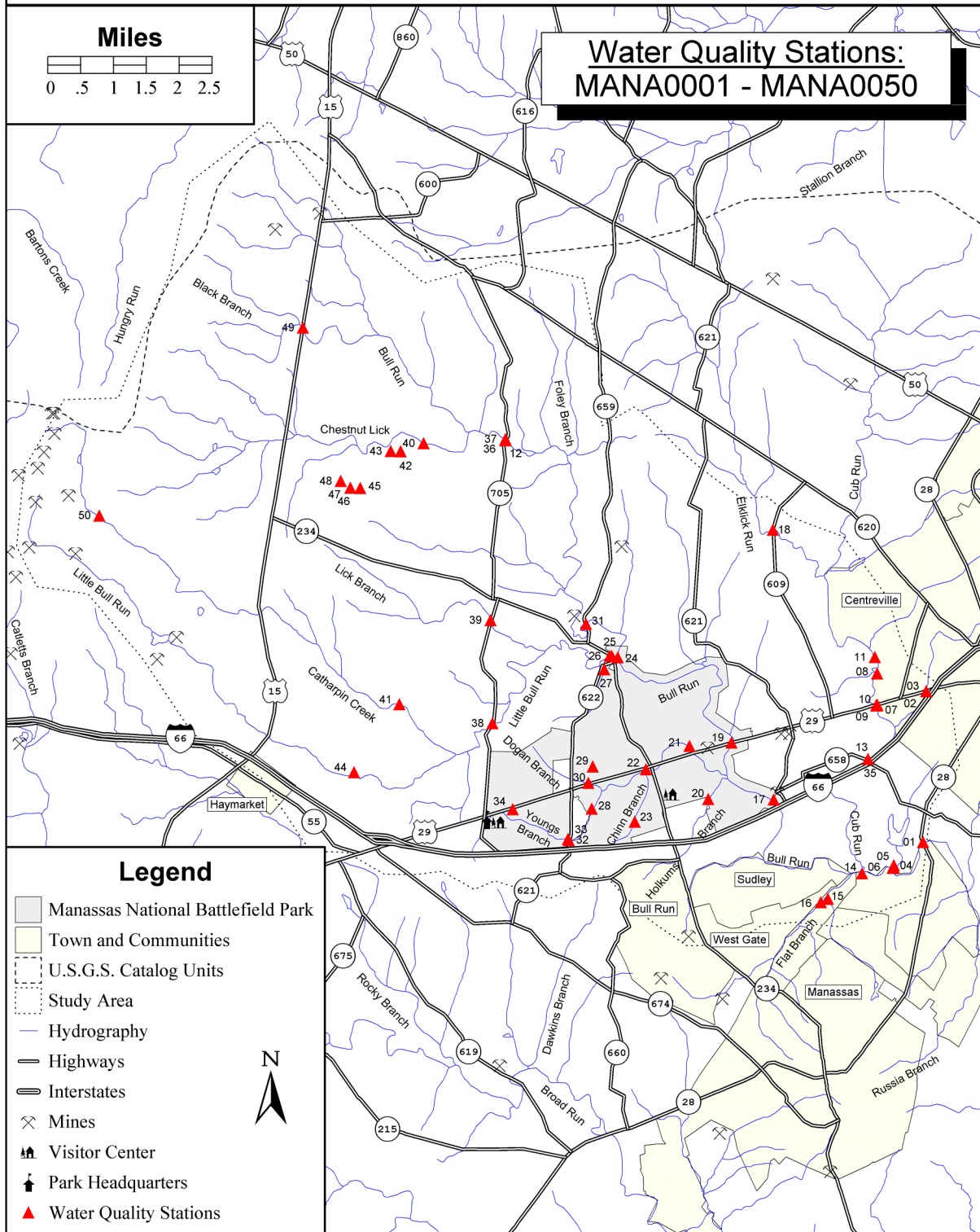
# Manassas National Battlefield Park

## Regional Location Map



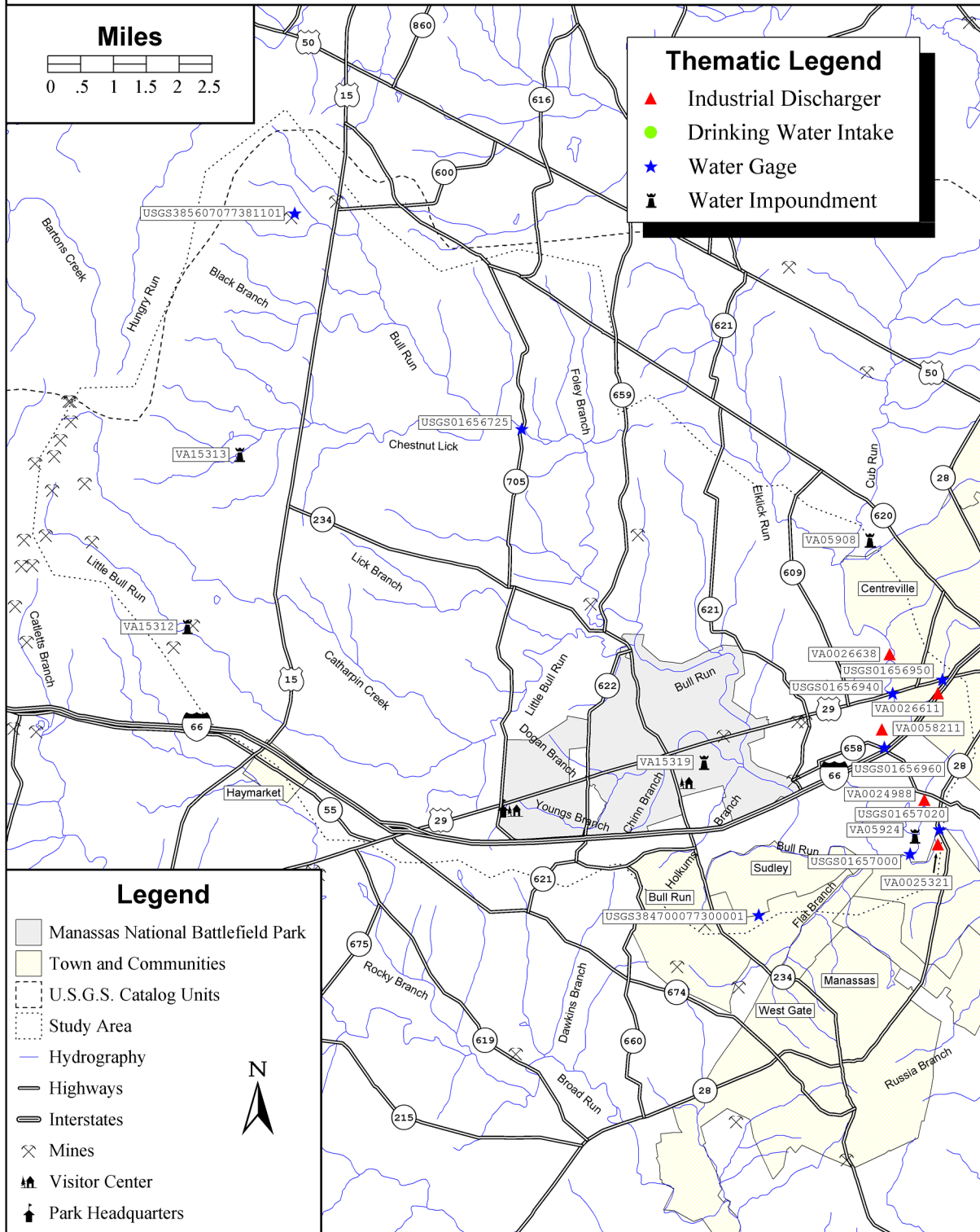
# Manassas National Battlefield Park

## Water Quality Monitoring Locations



# Manassas National Battlefield Park

## Dischargers, Drinking Intakes, Water Gages, & Water Impoundments



## Industrial Facility Discharges, Drinking Water Intakes, Water Gages, and Water Impoundments Within the MANA Study Area

### Industrial Facility Discharges

<u>Site ID</u>	<u>Station/Facility Name</u>	<u>Address</u>	<u>City</u>	<u>Facility Receiving Water Name</u>
VA0024988	UPPER OCCOQUAN REGIONAL STP	PO BOX 918 ATTN: M. H	CENTREVILLE	BULL RUN VIA TRIB
VA0025321	GREATER MANASSAS SAN.DIST PLT	OLD CENTERVILLE RD	MANASSAS	BULL RN
VA0026611	BIG ROCKY WATER POLLUTION CONT	LEE HWY	CENTREVILLE	BIG ROCKY RN
VA0026638	MIDDLE CUB WATER POLLUTION CON	RT 609	CENTREVILLE	CUB RN
VA0058211	AMAX CORPORATION	PO BOX 23 9, STERLING	CENTREVILLE	CUB RUN

### Drinking Water Intakes

<u>Site ID</u>	<u>Station/Facility Name</u>	<u>City</u>	<u>Population Served</u>	<u>Avg. Daily Production (Gal./Day)</u>
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No drinking water intakes available for this study area.

### Water Gages

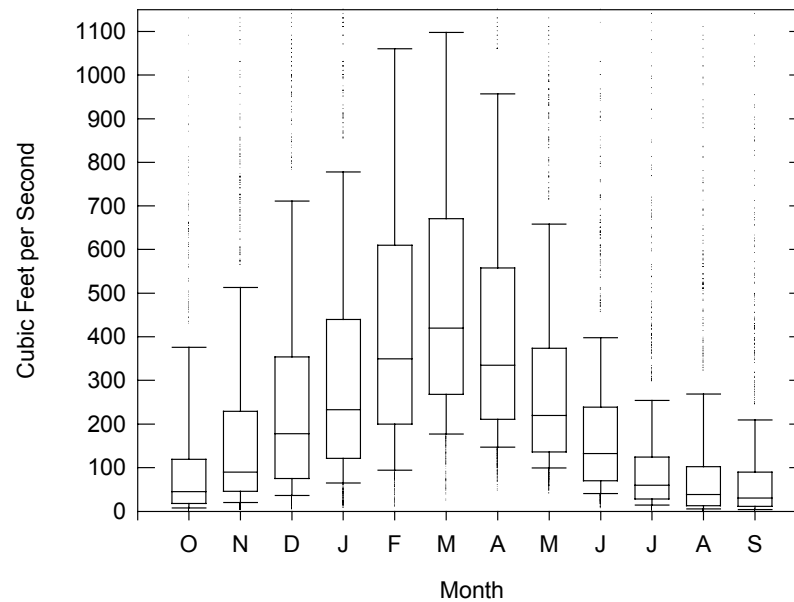
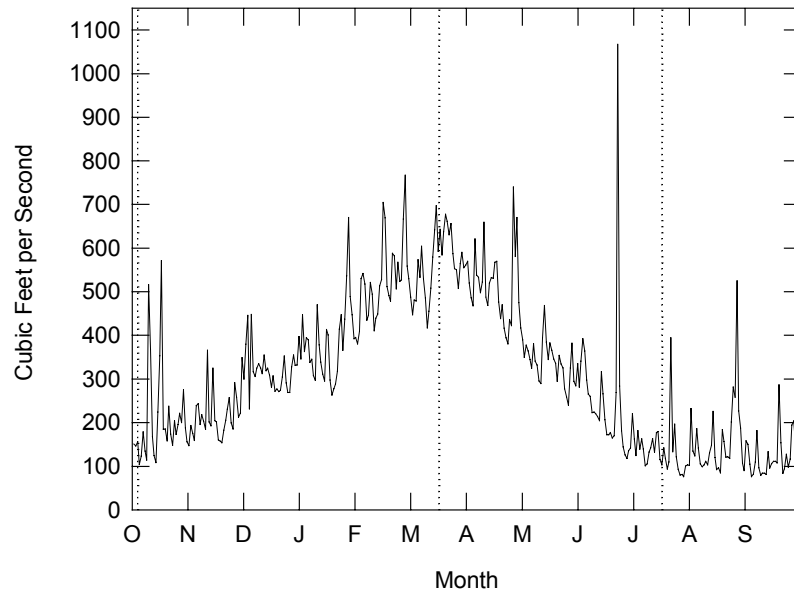
<u>Site ID</u>	<u>Station Name</u>	<u>Site Type</u>	<u>Drainage Area (Square Miles)</u>	<u>Begin Year</u>	<u>End Year</u>
USGS01656725	BULL RUN NEAR CATHARPIN, VA	Stream	25.80	1969	1987
USGS01656940	CUB RUN NEAR CENTREV	Stream	39.60		
USGS01656950	BIG ROCKY RN NR CENT	Stream	8.27		
USGS01656960	CUB RUN NEAR BULL RUN, VA	Stream	49.90	1973	1987
USGS01657000	BULL RUN NEAR MANASSAS, VA	Stream	148.00	1951	1982
USGS01657020	BULL RUN NEAR MANASSAS PARK, VA	Stream	148.00	1985	1988
USGS385607077381101	49V 1	Well			
USGS384700077300001	MANASSAS, VA 01656600	Climate			

### Water Impoundments

<u>Site ID</u>	<u>Impoundment Name</u>	<u>Owner</u>	<u>Primary Purpose</u>	<u>Type of Dam</u>	<u>Downstream Hazard</u>	<u>Year Completed</u>
VA05908	CHANTILLY COUNTRY CLUB DAM	CHANTILLY COUNTRY CLUB	Rec.	Earth	Low	1960
VA05924	UPR. OCCOQUAN REG.WATER	UPR.OCCOQUAN SEWAGE AUTH	Other	Earth	Significant	1976
VA15312	SILVER LAKE DAM	GEORGE GARRSAM	Rec.	Earth	Low	1961
VA15313	ALDRED DAM	DR ALDRED	Rec.	Earth	Low	1973
VA15319	MANASSAS NBP.NONAME DAM #1	DOI NPS NCR MANA	Farm	Earth	Low	1960

## REPRESENTATIVE MEAN ANNUAL HYDROGRAPH FOR SEASONAL ANALYSIS

MANASSAS NATIONAL BATTLEFIELD PARK  
Goose Creek near Leesburg, VA  
01644000, 58 year record



Representative mean annual hydrograph (top) and distribution of daily flows by month (bottom) for hydrologic season determination. Box and whiskers represent a five number summary; bottom whisker cap is 10th percentile, bottom of box is 25th percentile, internal line is median, top of box is 75th percentile, and top whisker is 90th percentile. Hydrologic seasons for Manassas National Battlefield Park are: Oct. 1 to Mar. 14, Mar. 15 to Jul. 14, and Jul. 15 to Sep. 30.



# CONTACTS FOR AGENCY CODES RETRIEVED FOR MANA

<u>AGENCY</u>	<u>PRIMARY CONTACT NAME</u>	<u>ORGANIZATION</u>	<u>PHONE NUMBER(S)</u>
21VASWCB	POLLOCK, VERA	VA DEPT OF ENVIRONMENTAL	(804)527-5224
31POTOMA	HAYWOOD, CARLTON	INTRSTAT COMM POTOMAC RVR	(301)984-1908
112WRD	WILLIAMS, OWEN	US GEOLOGICAL SURVEY	(703)648-5610
11NPSWRD	TUCKER, DEAN	NATIONAL PARK SERVICE	(970)225-3516 (970)225-3518
21VAOCCO	GRIZZARD, TOM	OCCOQUAN (VA) WATRSHD LAB	(703)631-0339
CHESBAY	BOSTATER, CHARLES	MARYLAND DEPT OF NAT RES	(301)269-3767

**QUANTITY OF DATA RETRIEVED FOR MANA BY AGENCY CODE**  
**WITHIN THE ENTIRE STUDY AREA (S.A.) AND JUST WITHIN THE PARK**

Agency	Organization	Period of Record		Water Quality Stations		Longer Term <sup>1</sup> Stations		No Data Stations		Water Quality Observations		Water Quality Parameters	
		Study Area	/ Park Only	S.A.	/ Park	S.A.	/ Park	S.A.	/ Park	S.A.	/ Park	S.A.	/ Park
21VASWCB	VA DEPT OF ENVIRONMENTAL	07/21/71-07/17/96	No Data in Park	13	0	7	0	1	0	12152	0	217	0
31POTOMA	INTRSTAT COMM POTOMAC RVR	02/21/73-11/21/73	No Data in Park	4	0	0	0	0	0	165	0	12	0
112WRD	US GEOLOGICAL SURVEY	11/19/52-08/24/94	03/25/75-06/24/80	14	2	1	0	0	0	4271	76	193	44
11NPSWRD	NATIONAL PARK SERVICE	12/02/82-11/13/94	12/02/82-11/13/94	11	11	11	11	0	0	8266	8266	16	16
21VAOCCO	OCCOQUAN (VA) WATRSHD LAB	01/01/73-06/29/78	No Data in Park	2	0	2	0	0	0	16352	0	37	0
CHESBAY	MARYLAND DEPT OF NAT RES	05/23/79-05/18/81	No Data in Park	6	0	0	0	0	0	3989	0	16	0
Totals		11/19/52-07/17/96	03/25/75-11/13/94	50	13	21	11	1	0	45195	8342	381	58

<sup>1</sup>Station With At Least 6 Parameters Having An Average of 1 Or More Observations Per Year During a Period of Record Extending At Least 2 Years.

### Station Period of Record Tabulation From 11/19/52 To 07/17/96

Station Ident.	Location Description	In Park	Total Obs	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75
MANA0001 <sup>1</sup>	RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY	No	5434	3707	1727	0
MANA0002	BIG ROCKY RUN NEAR CENTREVILLE, VA	No	30	0	30	0
MANA0003 <sup>1</sup>	RT. 29/211 BRIDGE	No	779	0	753	26
MANA0004	BULL RUN TRIB AT MANASSAS PARK, VA	No	34	0	34	0
MANA0005	BULL RUN NEAR MANASSAS, VA	No	317	53	43	221
MANA0006 <sup>1</sup>	GAGING STAT.ON OLD CENTERVILLE RD.	No	1198	0	823	375
MANA0007 <sup>1</sup>	RT. 29/211 BRIDGE	No	1837	828	973	36
MANA0008	CUB RUN BELOW MIDDLE CUB STP	No	42	0	0	42
MANA0009	CUB RUN NEAR CENTREVILLE, VA	No	49	0	49	0
MANA0010	CUB RUN 29 & 211	No	44	0	0	44
MANA0011	CUB RUN ABOVE MIDDLE CUB STP	No	44	0	0	44
MANA0012 <sup>1</sup>	BULL RUN NEAR CATHARPIN, VA	No	6330	0	4945	1385
MANA0013	CUB RUN NEAR BULL RUN, VA	No	1650	0	0	1650
MANA0014	BULL RUN ORDDWAY RD	No	35	0	0	35
MANA0015	RT. 1501	No	72	0	72	0
MANA0016 <sup>1</sup>	RT. 1501 BRIDGE(PRINCE WM.CO-MANASSAS TOWN)	No	431	0	417	14
MANA0017 <sup>1</sup>	BULL RUN BALL'S FORD	Yes	974	721	253	0
MANA0018	ELKCLICK RUN NEAR CHANTILLY, VA	No	34	0	34	0
MANA0019	ROUTE 29/211 (FAIRFAX CO)	No	38	0	38	0
MANA0020 <sup>1</sup>	HOLKUMS BRANCH	Yes	716	716	0	0
MANA0021 <sup>1</sup>	YOUNGS BRANCH QUARTERS 6	Yes	821	571	250	0
MANA0022 <sup>1</sup>	CHINN BRANCH AT YOUNGS BRANCH	Yes	1089	745	344	0
MANA0023	50U 84F	Yes	29	0	29	0
MANA0024 <sup>1</sup>	BULL RUN SUDLEY SPRINGS	Yes	987	742	245	0
MANA0025	ROUTE 234 (FAIRFAX CO)	No	34	0	34	0
MANA0026	LITTLE BULL RUN NEAR BULL RUN, VA	No	61	0	34	27
MANA0027 <sup>1</sup>	FEATHERBED LANE	Yes	231	17	214	0
MANA0028 <sup>1</sup>	YOUNGS BRANCH NEW YORK AVENUE	Yes	997	737	260	0
MANA0029	WELL NUMBER 50U1 AT WELL HEAD MANASSAS, VA	Yes	47	0	47	0
MANA0030 <sup>1</sup>	DOGAN BRANCH WARRENTON TURNPIKE	Yes	1083	733	350	0
MANA0031	BULL RUN AT RT 659 NEAR CATHARPIN, VA	No	187	0	0	187
MANA0032 <sup>1</sup>	YOUNGS BRANCH GROVETON ROAD TRIBUTARY	Yes	449	449	0	0
MANA0033 <sup>1</sup>	YOUNGS BRANCH GROVETON ROAD	Yes	479	479	0	0
MANA0034 <sup>1</sup>	UPPER YOUNGS BRANCH	Yes	440	440	0	0
MANA0035 <sup>1</sup>	CUB RUN NEAR BULL RUN	No	10022	0	8610	1412
MANA0036 <sup>1</sup>	BULL RUN NEAR CATHARPIN, VA	No	1722	77	34	1611
MANA0037 <sup>1</sup>	ROUTE 705	No	1083	856	227	0
MANA0038 <sup>1</sup>	ROUTE 705 BRIDGE	No	1102	836	266	0
MANA0039	LICK BRANCH AT CATHARPIN, VA	No	34	0	34	0
MANA0040	CHESTNUT LICK NEAR CATHARPIN, VA	No	34	0	34	0
MANA0041	ROUTE 676 (PRINCE WILLIAM CO)	No	65	43	22	0
MANA0042	51CB05, PASTURELAND IN NW PRINCE WILLIAM CO	No	310	0	310	0
MANA0043	51CB05, PASTURELAND IN NW PRINCE WILLIAM CO	No	296	0	296	0
MANA0044	RT. 676	No	0	0	0	0
MANA0045	51CB04, DISCHARGE FROM FARM POND	No	587	0	587	0
MANA0046	51CB03, PASTURELAND IN NW PRINCE WILLIAM CO	No	101	0	101	0
MANA0047	51CB02, CROPLAND IN NW PRINCE WILLIAM CO	No	834	0	834	0
MANA0048	51CB01, PASTURELAND IN NW PRINCE WILLIAM CO	No	1861	0	1861	0
MANA0049	BLACK BRANCH NEAR HAYMARKET, VA	No	43	0	43	0
MANA0050	ROUTE 6T00 (PRINCE WILLIAM CO)	No	79	58	21	0

<sup>1</sup>Longer Term Station With At Least 6 Parameters Having An Average of 1 Or More Observations Per Year During a Period of Record Extending At Least 2 Years.

# **Parameter Period of Record Tabulation** **From 11/19/52 To 07/17/96**

Parameter Code	Name	Total Obs	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Stations	
						Total	Park
00002	X-SEC. LOC., HORIZ (% FROM R BANK LOOK UPSTR.)	415	181	201	33	7	0
00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	1599	204	1177	218	13	1
00005	X-SEC. LOC., VERTICAL (PERCENT OF TOTAL DEPTH)	175	0	142	33	6	0
00008	NUMBER USED IN SAMPLE ACCOUNTING PROCEDURE	17	0	17	0	2	0
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	2217	978	804	435	39	13
00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	110	110	0	0	10	10
00023	SAMPLE WEIGHT IN POUNDS	6	6	0	0	1	0
00024	SAMPLE LENGTH IN INCHES	6	6	0	0	1	0
00025	BAROMETRIC PRESSURE (MM OF HG)	1	1	0	0	1	0
00027	CODE NO FOR AGENCY COLLECTING SAMPLE-SEE APPEND.	4	4	0	0	2	0
00028	CODE NO FOR AGENCY ANALYZING SAMPLE (SEE APPEND)	13	4	9	0	9	1
00041	WEATHER (WMO CODE 4501)	482	185	265	32	8	0
00045	PRECIPITATION, TOTAL (INCHES PER DAY)	200	200	0	0	10	10
00051	SURFACE AREA IN SQUARE FEET	351	0	350	1	2	0
00053	SURFACE AREA, ACRES	351	0	350	1	2	0
00060	FLOW, STREAM, MEAN DAILY CFS	10	0	0	10	3	0
00061	FLOW, STREAM, INSTANTANEOUS CFS	1299	193	1105	1	14	8
00064	DEPTH OF STREAM, MEAN (FT)	249	249	0	0	10	10
00065	STAGE, STREAM (FEET)	472	2	288	182	5	0
00067	TIDE STAGE (REFER TO APPENDIX FOR CODES)	1	1	0	0	1	0
00070	TURBIDITY, (JACKSON CANDLE UNITS)	60	60	0	0	4	0
00075	TURBIDITY, HELIGE (PPM AS SILICON DIOXIDE)	15	0	0	15	4	0
00076	TURBIDITY,HACH TURBIDIMETER (FORMAZIN TURB UNIT)	41	41	0	0	5	0
00077	TRANSPARENCY, SECCHI DISC (INCHES)	3	0	3	0	3	0
00080	COLOR (PLATINUM-COBALT UNITS)	65	42	12	11	17	2
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	1299	940	359	0	15	11
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	171	131	13	27	21	2
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	1172	890	282	0	15	11
00300	OXYGEN, DISSOLVED MG/L	1008	85	500	423	25	0
00310	BOD, 5 DAY, 20 DEG C MG/L	567	179	327	61	20	0
00335	COD, .025N K2CR2O7 MG/L	33	0	33	0	2	0
00340	COD, .25N K2CR2O7 MG/L	406	181	225	0	16	0
00400	PH (STANDARD UNITS)	979	168	503	308	28	2
00403	PH, LAB, STANDARD UNITS SU	213	167	45	1	13	0
00405	CARBON DIOXIDE (MG/L AS CO2)	9	0	9	0	9	1
00406	PH, FIELD, STANDARD UNITS SU	1099	798	301	0	11	11
00410	ALKALINITY, TOTAL (MG/L AS CACO3)	786	166	249	371	27	2
00430	ALKALINITY, CARBONATE (MG/L AS CACO3)	253	0	171	82	4	0
00440	BICARBONATE ION (MG/L AS HCO3)	22	0	11	11	12	1
00445	CARBONATE ION (MG/L AS CO3)	19	0	9	10	10	1
00453	BICARBONATE,WATER,DISS,INCR TIT,FIELD,AS HCO3,MG/L	1	1	0	0	1	0
00480	SALINITY - PARTS PER THOUSAND	251	251	0	0	8	8
00500	RESIDUE, TOTAL (MG/L)	189	139	50	0	12	0
00505	RESIDUE, TOTAL VOLATILE (MG/L)	190	140	50	0	12	0
00510	RESIDUE, TOTAL FIXED (MG/L)	190	139	51	0	12	0
00515	RESIDUE, TOTAL FILTRABLE (DRIED AT 105C),MG/L	206	1	0	205	4	0
00520	RESIDUE, VOLATILE FILTRABLE (MG/L)	189	0	0	189	3	0
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	2710	718	1776	216	36	11
00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	790	179	423	188	14	0
00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	403	179	224	0	12	0
00600	NITROGEN, TOTAL (MG/L AS N)	501	0	501	0	2	0
00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	573	0	501	72	4	0
00607	NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)	476	0	472	4	4	0
00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	1275	1	988	286	5	0
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	973	184	680	109	26	0
00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	303	1	12	290	15	2
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	587	183	266	138	16	0
00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	300	0	12	288	15	2
00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	459	184	128	147	20	0
00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	866	1	861	4	10	0
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	2286	181	1738	367	27	0
00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	601	50	551	0	23	10
00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	1093	1	1092	0	14	2
00650	PHOSPHATE, TOTAL (MG/L AS PO4)	18	0	0	18	7	0
00660	PHOSPHATE, ORTHO (MG/L AS PO4)	215	0	12	203	13	2
00665	PHOSPHORUS, TOTAL (MG/L AS P)	2130	203	1544	383	31	10
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	878	1	866	11	13	0
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	2009	126	1488	395	41	12
00673	PHOSPHORUS, DISSOLVED ORGANIC (MG/L AS P)	4	0	0	4	2	0
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	1066	176	487	403	18	0
00681	CARBON, DISSOLVED ORGANIC (MG/L AS C)	131	0	131	0	3	0

**Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Parameter Code	Name	Total Obs	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Stations	
						Total	Park
00691	CARBON, DISSOLVED INORGANIC (MG/L AS C)	12	0	0	12	4	0
00900	HARDNESS, TOTAL (MG/L AS CaCO3)	185	161	13	11	19	2
00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	23	0	12	11	13	2
00915	CALCIUM, DISSOLVED (MG/L AS Ca)	24	1	12	11	13	2
00925	MAGNESIUM, DISSOLVED (MG/L AS Mg)	24	1	12	11	13	2
00930	SODIUM, DISSOLVED (MG/L AS Na)	24	1	12	11	13	2
00931	SODIUM ADSORPTION RATIO	22	0	12	10	13	2
00932	SODIUM, PERCENT	22	0	12	10	13	2
00933	SODIUM,PLUS POTASSIUM (MG/L)	8	0	8	0	8	0
00935	POTASSIUM, DISSOLVED (MG/L AS K)	25	1	13	11	14	2
00940	CHLORIDE,TOTAL IN WATER MG/L	175	142	22	11	23	2
00945	SULFATE, TOTAL (MG/L AS SO4)	163	140	12	11	18	2
00950	FLUORIDE, DISSOLVED (MG/L AS F)	24	1	12	11	13	2
00951	FLUORIDE, TOTAL (MG/L AS F)	72	72	0	0	4	0
00955	SILICA, DISSOLVED (MG/L AS SiO2)	95	72	12	11	17	2
01000	ARSENIC, DISSOLVED (UG/L AS AS)	3	0	3	0	3	1
01002	ARSENIC, TOTAL (UG/L AS AS)	57	16	37	4	10	0
01003	ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	18	13	5	0	6	0
01004	ARSENIC TOTAL IN FISH OR ANIMAL WET WT MG/KG	6	6	0	0	1	0
01008	BARIUM IN BOTTOM DEPOSITS (MG/KG AS Ba DRY WGT)	1	0	1	0	1	0
01012	BERYLLIUM, TOTAL (UG/L AS BE)	10	10	0	0	6	0
01013	BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	14	11	3	0	6	0
01025	CADMIUM, DISSOLVED (UG/L AS Cd)	3	0	3	0	3	1
01027	CADMIUM, TOTAL (UG/L AS Cd)	62	16	39	7	10	0
01028	CADMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	19	13	6	0	7	0
01029	CHROMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	19	13	6	0	7	0
01030	CHROMIUM, DISSOLVED (UG/L AS Cr)	3	0	3	0	3	1
01034	CHROMIUM, TOTAL (UG/L AS Cr)	64	15	40	9	10	0
01035	COBALT, DISSOLVED (UG/L AS Co)	1	0	1	0	1	1
01040	COPPER, DISSOLVED (UG/L AS Cu)	3	0	3	0	3	1
01042	COPPER, TOTAL (UG/L AS Cu)	63	14	40	9	10	0
01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS Cu DRY WGT)	20	14	6	0	7	0
01045	IRON, TOTAL (UG/L AS Fe)	25	14	11	0	8	0
01046	IRON, DISSOLVED (UG/L AS Fe)	23	1	12	10	13	2
01049	LEAD, DISSOLVED (UG/L AS Pb)	145	0	145	0	8	1
01051	LEAD, TOTAL (UG/L AS Pb)	209	16	185	8	15	0
01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS Pb DRY WGT)	19	13	6	0	7	0
01053	MANGANESE IN BOTTOM DEPOSITS (MG/KG AS Mn DRY WGT)	8	8	0	0	6	0
01055	MANGANESE, TOTAL (UG/L AS Mn)	21	8	13	0	9	0
01056	MANGANESE, DISSOLVED (UG/L AS Mn)	3	1	2	0	3	0
01059	THALLIUM, TOTAL (UG/L AS Tl)	10	10	0	0	6	0
01065	NICKEL, DISSOLVED (UG/L AS Ni)	39	0	35	4	8	1
01067	NICKEL, TOTAL (UG/L AS Ni)	21	15	6	0	7	0
01068	NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	18	13	5	0	6	0
01069	NICKEL, TOTAL IN FISH OR ANIMALS-WET WEIGHT MG/KG	6	6	0	0	1	0
01073	THALLIUM, TISSUE, WET WEIGHT, MG/KG	3	3	0	0	1	0
01075	SILVER, DISSOLVED (UG/L AS Ag)	1	0	1	0	1	1
01077	SILVER, TOTAL (UG/L AS Ag)	4	4	0	0	3	0
01078	SILVER IN BOTTOM DEPOSITS (MG/KG AS Ag DRY WGT)	7	7	0	0	5	0
01090	ZINC, DISSOLVED (UG/L AS Zn)	133	0	133	0	8	1
01092	ZINC, TOTAL (UG/L AS Zn)	202	14	179	9	15	0
01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS Zn DRY WGT)	19	13	6	0	7	0
01097	ANTIMONY, TOTAL (UG/L AS Sb)	2	2	0	0	2	0
01098	ANTIMONY IN BOTTOM DEPOSITS (MG/KG AS Sb DRY WGT)	3	3	0	0	3	0
01106	ALUMINUM, DISSOLVED (UG/L AS Al)	1	0	1	0	1	1
01108	ALUMINUM IN BOTTOM DEPOSITS (MG/KG AS Al DRY WGT)	3	3	0	0	3	0
01145	SELENIUM, DISSOLVED (UG/L AS Se)	2	0	2	0	2	0
01147	SELENIUM, TOTAL (UG/L AS Se)	14	14	0	0	6	0
01148	SELENIUM IN BOTTOM DEPOSITS (MG/KG AS Se DRY WGT)	14	11	3	0	6	0
01149	SELENIUM, TOTAL IN FISH OR ANIMALS WET WGT MG/KG	3	3	0	0	1	0
01170	IRON IN BOTTOM DEPOSITS (MG/KG AS Fe DRY WGT)	5	5	0	0	5	0
01351	FLOW, STRM,1DRY,2LOW,3NORM,4FLOOD,5ABOVE NORM,CODE	232	177	55	0	4	0
04024	PROPACHLOR, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	1	1	0	0	1	0
04028	BUTYLATE, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	1	1	0	0	1	0
04035	SIMAZINE, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	1	1	0	0	1	0
04037	PROMETON, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	1	1	0	0	1	0
04040	DEETHYL ATRAZINE, DISSOLVED, WATER, TOT REC UG/L	1	1	0	0	1	0
04041	CYANAZINE, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	1	1	0	0	1	0
04095	FONOFOS, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	1	1	0	0	1	0
31501	COLIFORM, TOT, MEMBRANE FILTER, IMMED. M-ENDO MED, 35C	10	0	0	10	2	0
31505	COLIFORM, TOT, MPN, CONFIRMED TEST, 35C (TUBE 31506)	40	0	20	20	8	0

**Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Parameter Code	Name	Total Obs	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Stations	
						Total	Park
31506	COLIFORM,TOT,MPN, CONFIRMED TEST, TUBE CONFIG.	2	0	2	0	2	0
31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	126	1	63	62	9	0
31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	817	379	392	46	25	11
31678	FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATION	8	0	0	8	4	0
31679	FECAL STREPTOCOCCI,MF M-ENTEROCOCCUS AGAR,35C,48H	12	0	0	12	2	0
32240	TANNIN AND LIGNIN (MG/L)	8	8	0	0	4	0
34204	ACENAPHTHYLENE WET WGT TISM/G/KG	2	2	0	0	1	0
34209	ACENAPHTHENE WET WGT TISM/G/KG	2	2	0	0	1	0
34224	ANTHRACENE WET WGT TISM/G/KG	2	2	0	0	1	0
34234	BENZO(B)FLUORANTHENE, TISSUE, WET WGT, MG/KG	2	2	0	0	1	0
34246	BENZO(K)FLUORANTHENE, WET WT, TISSUE MG/KG	2	2	0	0	1	0
34251	BENZO-A-PYRENE WET WGT TISM/G/KG	2	2	0	0	1	0
34252	BERYLLIUM WET WGT TISM/G/KG	3	3	0	0	1	0
34253	A-BHC-ALPHA DISSUG/L	1	1	0	0	1	0
34258	B-BHC-BETA WET WGT TISM/G/KG	6	6	0	0	1	0
34259	DELTA BENZENE HEXACHLORIDE TOTWUG/L	6	6	0	0	4	0
34263	DELTA BENZENE HEXACHLORIDE WET WGT TISM/G/KG	6	6	0	0	1	0
34324	CHRYSENE WET WGT TISM/G/KG	1	1	0	0	1	0
34340	DIETHYL PHTHALATE WET WGT TISM/G/KG	1	1	0	0	1	0
34345	DIMETHYL PHTHALATE WET WGT TISM/G/KG	1	1	0	0	1	0
34351	ENDOSULFAN SULFATE TOTWUG/L	6	6	0	0	4	0
34356	ENDOSULFAN, BETA TOTWUG/L	6	6	0	0	4	0
34360	ENDOSULFAN, BETA WET WGT TISM/G/KG	6	6	0	0	1	0
34361	ENDOSULFAN, ALPHA TOTWUG/L	6	6	0	0	4	0
34365	ENDOSULFAN, ALPHA WET WGT TISM/G/KG	6	6	0	0	1	0
34366	ENDRIN ALDEHYDE TOTWUG/L	6	6	0	0	4	0
34380	FLUORANTHENE WET WGT TISM/G/KG	1	1	0	0	1	0
34385	FLUORENE WET WGT TISM/G/KG	1	1	0	0	1	0
34407	INDENO (1,2,3-CD) PYRENE WET WGT TISM/G/KG	1	1	0	0	1	0
34437	N-NITROSODIPHENYLAMINE WET WGT TISM/G/KG	1	1	0	0	1	0
34446	NAPHTHALENE WET WGT TISM/G/KG	1	1	0	0	1	0
34465	PHENANTHRENE WET WGT TISM/G/KG	1	1	0	0	1	0
34473	PYRENE WET WGT TISM/G/KG	1	1	0	0	1	0
34480	THALLIUM DRY WGT BOTM/G/KG	13	10	3	0	6	0
34525	BENZO(GH)PERYLENE1,12-BENZOPERYLENWET WGT TISM/G/KG	2	2	0	0	1	0
34530	BENZO(A)ANTHRACENE1,2-BENZANTHRACENWET WGT TISM/G/KG	2	2	0	0	1	0
34555	1,2,4-TRICHLOROBENZENE WET WGT TISM/G/KG	1	1	0	0	1	0
34585	2-CHLORONAPHTHALENE WET WGT TISM/G/KG	1	1	0	0	1	0
34635	3,3'-DICHLOROBENZIDINE WET WGT TISM/G/KG	1	1	0	0	1	0
34640	4-BROMOPHENYL PHENYL ETHER WET WGT TISM/G/KG	2	2	0	0	1	0
34653	P,P'-DDE DISSUG/L	1	1	0	0	1	0
34664	PCB - 1221 WET WGT TISM/G/KG	3	3	0	0	1	0
34667	PCB - 1232 WET WGT TISM/G/KG	3	3	0	0	1	0
34669	PCB - 1248 WET WGT TISM/G/KG	3	3	0	0	1	0
34670	PCB - 1260 WET WGT TISM/G/KG	6	6	0	0	1	0
34671	PCB - 1016 TOTWUG/L	6	6	0	0	4	0
34674	PCB - 1016 WET WGT TISM/G/KG	3	3	0	0	1	0
34680	ALDRIN IN FISH TISSUE WET WEIGHT MG/KG	6	6	0	0	1	0
34682	CHLORDANE(TECH MIX & METABS), TISSUE WET WGT TISM/G/KG	6	6	0	0	1	0
34685	ENDRIN WET WGT TISM/G/KG	6	6	0	0	1	0
34686	HEPTACHLOR EPOXIDE WET WGT TISM/G/KG	5	5	0	0	1	0
34687	HEPTACHLOR WET WGT TISM/G/KG	6	6	0	0	1	0
34688	HEXACHLOROBENZENE WET WGT TISM/G/KG	4	4	0	0	1	0
34689	PCB - 1242 WET WGT TISM/G/KG	3	3	0	0	1	0
34690	PCB - 1254 WET WGT TISM/G/KG	6	6	0	0	1	0
34691	TOXAPHENE WET WGT TISM/G/KG	6	6	0	0	1	0
34790	SURFACTANTS, AS CTAS, WATER MG/L	1	1	0	0	1	0
34795	ANTIMONY, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34800	ARSENIC, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34810	BERYLLIUM, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34816	BISMUTH, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34825	CADMIUM, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34830	CALCIUM, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34835	CERIUM, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34840	COBALT, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34845	CHROMIUM, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34850	COPPER, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34855	EUROPIUM, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34860	GALLIUM, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34870	GOLD, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0
34875	HOLMIUM, BEDLOAD SED, WET SIEVE DIAM	1	1	0	0	1	0

**Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Parameter Code	Name	Total Obs	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Stations	
						Total	Park
34880	IRON,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34885	LANTHANUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34890	LEAD,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34895	LITHIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34900	MAGNESIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34905	MANGANESE,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34910	MERCURY,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34915	MOLYBDENUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34920	NEODYMIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34925	NICKEL,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34930	NIObIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34935	PHOSPHORUS,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34940	POTASSIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34945	SCANDIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34950	SELENIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34955	SILVER,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34960	SODIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34965	STRONTIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34970	SULFUR,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34975	TANTALUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34980	THORIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
34985	TIN,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
35000	URANIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
35005	VANADIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
35010	YTTRIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
35015	YTTERBIUM,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
35020	ZINC,BEDLOAD SED,WET SIEVE DIAM	1	1	0	0	1	0
38442	DICAMBA (BANVEL) WATER,DISSUG/L	2	2	0	0	1	0
38451	DICHLORPROP WATER,SUSPUG/L	2	2	0	0	1	0
38744	CHLORPYRIFOS-METHYL TISWETWGTMG/KG	3	3	0	0	1	0
38745	2,4-DB WATER, TOTUG/L	6	6	0	0	4	0
38933	CHLORPYRIFOS,DISSOLVED UG/L	1	1	0	0	1	0
39032	PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE UG/L	9	6	3	0	4	0
39061	PCP (PENTACHLOROPHENOL) IN BOT DEPOS DRY SOL UG/KG	11	10	1	0	4	0
39062	CHLORDANE-CIS ISOMER,WHOLE WATER SAMPL (UG/L)	3	0	3	0	1	0
39065	CHLORDANE-TRNS ISOMER,WHOLE WATER SAMPL (UG/L)	3	0	3	0	1	0
39068	CHLORDANE-NONACHLOR,CIS ISO,WHOLE WTR (UG/L)	3	0	3	0	1	0
39069	CHLORDANE-NONACHLOR,CIS ISO,TISSUE WET WGT(UG/G)	6	6	0	0	1	0
39071	CHLORDANE-NONACHLOR,TPANS ISO,WHOLE WTR (UG/L)	3	0	3	0	1	0
39072	CHLORDANE-NONACHLOR,TRANS ISO,TISSUE,WET WT,UG/G	6	6	0	0	1	0
39074	BHC-ALPHA ISOMER,TISSUE UG/G WET WGT	6	6	0	0	1	0
39086	ALKALINITY, WATER,DISS,INCR TIT,FIELD,AS CaCO3,MG/L	1	1	0	0	1	0
39099	BIS(2-ETHYLHEXYL)PHTHALATE, TISSUE, WET WGT,MG/KG	1	1	0	0	1	0
39113	DIBUTYL PHTHALATES IN FISH,ANIMAL WET WGT UG/KG	1	1	0	0	1	0
39290	DDT TOTAL IN TISSUE WET WGT BASIS (UG/G)	6	6	0	0	1	0
39300	P,P' DDT IN WHOLE WATER SAMPLE (UG/L)	9	6	3	0	4	0
39305	O,P' DDT IN WHOLE WATER SAMPLE (UG/L)	3	0	3	0	1	0
39310	P,P' DDD IN WHOLE WATER SAMPLE (UG/L)	9	6	3	0	4	0
39315	O,P' DDD IN WHOLE WATER SAMPLE (UG/L)	3	0	3	0	1	0
39320	P,P' DDE IN WHOLE WATER SAMPLE (UG/L)	9	6	3	0	4	0
39327	ORTHO PARA DDE IN WHOLE WATER SAMPLE (UG/L)	3	0	3	0	1	0
39330	ALDRIN IN WHOLE WATER SAMPLE (UG/L)	13	7	6	0	4	0
39333	ALDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	9	5	4	0	4	0
39337	ALPHA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	6	6	0	0	4	0
39338	BETA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	6	6	0	0	4	0
39340	GAMMA-BHC(LINDANE),WHOLE WATER,UG/L	6	6	0	0	4	0
39341	GAMMA-BHC(LINDANE),DISSOLVED,UG/L	1	1	0	0	1	0
39343	GAMMA-BHC(LINDANE),SEDIMENTS,DRY WGT,UG/KG	1	0	1	0	1	0
39350	CHLORDANE(TECH MIX & METABS),WHOLE WATER,UG/L	3	0	3	0	1	0
39351	CHLORDANE(TECH MIX&METABS),SEDIMENTS,DRY WGT,UG/KG	12	10	2	0	5	0
39363	DDD IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	12	10	2	0	5	0
39368	DDE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	12	10	2	0	5	0
39373	DDT IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	12	10	2	0	5	0
39380	DIELDRIN IN WHOLE WATER SAMPLE (UG/L)	9	6	3	0	4	0
39381	DIELDRIN IN FILT. FRAC. OF WATER SAMPLE (UG/L)	1	1	0	0	1	0
39383	DIELDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	12	10	2	0	5	0
39390	ENDRIN IN WHOLE WATER SAMPLE (UG/L)	9	6	3	0	4	0
39393	ENDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	12	10	2	0	5	0
39400	TOXAPHENE IN WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4	0
39403	TOXAPHENE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	12	10	2	0	5	0
39404	DIELDRIN IN TISSUE WET WGT (UG/G)	6	6	0	0	1	0

# **Parameter Period of Record Tabulation** **From 11/19/52 To 07/17/96**

Parameter Code	Name	Total Obs	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Stations	
						Total	Park
39410	HEPTACHLOR IN WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4	0
39413	HEPTACHLOR IN BOT. DEP. (UG/KILOGRAM DRY SOLIDS)	12	10	2	0	5	0
39415	METOLACHLOR, WATER, DISSOLVED UG/L	1	1	0	0	1	0
39420	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4	0
39423	HEPTACHLOR EPOXIDE IN BOT. DEP. (UG/KG DRY SOL.)	1	0	1	0	1	0
39480	METHOXYCHLOR IN WHOLE WATER SAMPLE (UG/L)	3	0	3	0	1	0
39488	PCB - 1221 IN THE WHOLE WATER SAMPLE UG/L	6	6	0	0	4	0
39492	PCB - 1232 PCB SERIES WHOLE WATER SAMPLE UG/L	6	6	0	0	4	0
39496	PCB - 1242 PCB SERIES WHOLE WATER SAMPLE UG/L	6	6	0	0	4	0
39500	PCB - 1248 PCB SERIES WHOLE WATER SAMPLE UG/L	6	6	0	0	4	0
39508	PCB - 1260 PCB SERIES WHOLE WATER SAMPLE UG/L	6	6	0	0	4	0
39515	PCBS (MG/KG) FISH TISSUE MG/KG	6	6	0	0	1	0
39516	PCBS IN WHOLE WATER SAMPLE (UG/L)	7	4	3	0	4	0
39519	PCBS IN BOTTOM DEPOSITS (UG/KG DRY SOLIDS)	1	0	1	0	1	0
39526	PCBS TOTAL,IN SEDIMENT,DRY (ISOMER ANALYSES) UG/KG	11	10	1	0	4	0
39532	MALATHION IN FILT. FRAC. OF WATER SAMPLE (UG/L)	1	1	0	0	1	0
39542	PARATHION IN FILT. FRAC. OF WATER SAMPLE (UG/L)	1	1	0	0	1	0
39572	DIAZINON IN FILT. FRAC. OF WATER SAMPLE (UG/L)	1	1	0	0	1	0
39630	ATRAZINE(AATREX) IN WHOLE WATER SAMPLE (UG/L)	3	0	3	0	1	0
39631	ATRAZINE IN BOTTOM DEPOS (UG/KG DRY SOLIDS)	3	0	3	0	1	0
39632	ATRAZINE DISSOLVED IN WATER PPB	1	1	0	0	1	0
39700	HEXACHLOROBENZENE IN WHOLE WATER SAMPLE (UG/L)	3	0	3	0	1	0
39730	2,4-D IN WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4	0
39740	2,4,5-T IN WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4	0
39760	SILVEX IN WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4	0
39785	GAMMA-BHC(LINDANE),TISSUE,WET WEIGHT,MG/KG	6	6	0	0	1	0
45651	PCB - 1262, TISSUE, WET WEIGHT MG/KG	3	3	0	0	1	0
46342	ALACHLOR (LASSO), WATER, DISSOLVED UG/L	1	1	0	0	1	0
46570	HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	10	10	0	0	6	0
50060	CHLORINE, TOTAL RESIDUAL (MG/L)	99	10	88	1	6	0
70300	RESIDUE,TOTAL FILTRABLE (DRIED AT 180C),MG/L	24	1	12	11	13	2
70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	22	0	12	10	13	2
70302	SOLIDS, DISSOLVED-TONS PER DAY	11	0	2	9	5	0
70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	22	0	12	10	13	2
70505	PHOSPHATE,TOTAL,COLORIMETRIC METHOD (MG/L AS P)	221	0	195	26	7	0
70507	PHOSPHORUS,IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	306	88	192	26	9	0
71846	NITROGEN, AMMONIA, DISSOLVED (MG/L AS NH4)	148	0	0	148	3	0
71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	173	0	12	161	14	2
71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	163	0	12	151	13	2
71885	IRON (UG/L AS FE)	1	0	0	1	1	0
71890	MERCURY, DISSOLVED (UG/L AS HG)	3	0	3	0	3	1
71900	MERCURY, TOTAL (UG/L AS HG)	61	12	40	9	10	0
71921	MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	18	13	5	0	7	0
71930	MERCURY,TOTAL IN FISH OR ANIMAL-WET WEIGHT BASIS	6	6	0	0	1	0
71936	LEAD,TOTAL IN FISH OR ANIMALS-WET WEIGHT BASIS	6	6	0	0	1	0
71937	COPPER,TOTAL IN FISH OR ANIMALS-WET WEIGHT BASIS	6	6	0	0	1	0
71938	ZINC,TOTAL IN FISH OR ANIMALS-WET WEIGHT BASIS	6	6	0	0	1	0
71939	CHROMIUM,TOT IN FISH OR ANIMALS-WET WEIGHT BASIS	6	6	0	0	1	0
71940	CADMIUM,TOTAL IN FISH OR ANIMAL-WET WEIGHT BASIS	6	6	0	0	1	0
75045	HEPTACHLOR EPOXIDE SEDIMENT,DRY,WT,UG/KG	6	6	0	0	3	0
77825	ALACHLOR WHOLE WATER,UG/L	6	6	0	0	4	0
79038	BUTYLBENZYL PHTHALATE TISWETWTMG/KG	1	1	0	0	1	0
79040	DIBENZ(A,H)ANTHRACENE TISWETWTMG/KG	1	1	0	0	1	0
79799	DICOFOL (KELTHANE) SEDIMENT,DRY,WT,UG/KG	6	6	0	0	3	0
80154	SUSP. SEDIMENT CONCENTRATION-EVAP. AT 110C (MG/L)	1	1	0	0	1	0
81614	NUMBER OF INDIVIDUALS IN THE SAMPLE	5	5	0	0	1	0
81644	METHOXYCHLOR IN FISH TISSUE,UG/G WET WEIGHT	6	6	0	0	1	0
81645	MIREX IN FISH TISSUE WET WEIGHT UG/G	3	3	0	0	1	0
81742	SILVER IN FISH TISSUE WET WEIGHT (MG/KG)PPM	6	6	0	0	1	0
81823	PENTACHLOROANISOLE(PCA)INFISH TISSUE WET WGT MG/KG	6	6	0	0	1	0
81896	DDE TOTAL IN TISSUE WET WEIGHT MG/KG	6	6	0	0	1	0
81897	DDD TOTAL IN TISSUE WET WEIGHT MG/KG	6	6	0	0	1	0
82029	OXYCHLORDANE IN TISSUE SAMPLE WET WEIGHT MG/KG	3	3	0	0	1	0
82033	MAGNESIUM - TOTAL UG/L(AS MG)	2	2	0	0	2	0
82078	TURBIDITY,FIELD NEPHELOMETRIC TURBIDITY UNITS,NTU	42	42	0	0	4	0
82079	TURBIDITY,LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	1058	757	301	0	11	11
82630	METRIBUZIN (SENCOR), WATER, DISSOLVED UG/L	1	1	0	0	1	0
82660	DIETHYLANILINE, 2, 6,-0.7UM FILT,TOT RECV,WTR UG/L	1	1	0	0	1	0
82661	TRIFLURALINE, 0.7UM FILT,TOT RECV, WATER UG/L	1	1	0	0	1	0
82662	DIMETHOATE, 0.7 UM FILT,TOT RECV, WATER UG/L	1	1	0	0	1	0
82663	ETHALFLURALIN, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0



**Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Parameter Code	Name	Total Obs	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Stations	
						Total	Park
82664	PHORATE, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82665	TERBACIL, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82666	LINURON, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82667	METHYL PARATHION, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82668	EPTC, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82669	PEBULATE, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82670	TEBUTHIURON, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82671	MOLINATE, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82672	ETHOPROP, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82673	BENFLURALIN, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82674	CARBOFURAN, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82675	TERBUFOS, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82676	PRONAMIDE, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82677	DISULFOTON, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82678	TRIALATE, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82679	PROPANIL, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82680	CARBARYL, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82681	THIOBENCARB, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82682	DCCA, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82683	PENDIMETHALIN, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82684	NAPROPAMIDE, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82685	PROPARGITE, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82686	METHYL AZINPHOS, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
82687	PERMETHRIN, CIS, 0.7 UM FILT, TOT RECV, WATER UG/L	1	1	0	0	1	0
84007	ANATOMY ALPHA CODE	6	6	0	0	1	0
85663	FLOW, RATE FT/SEC	517	517	0	0	10	10

# Station/Parameter Period of Record Tabulation From 11/19/52 To 07/17/96

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0001	No	00002	X-SEC. LOC., HORIZ (% FROM R BANK LOOK UPSTR.)	07/10/79-07/17/96	17	169	
MANA0003	No	00002	X-SEC. LOC., HORIZ (% FROM R BANK LOOK UPSTR.)	10/07/74-05/30/78	3	30	
MANA0006	No	00002	X-SEC. LOC., HORIZ (% FROM R BANK LOOK UPSTR.)	07/21/71-05/30/78	6	64	
MANA0007	No	00002	X-SEC. LOC., HORIZ (% FROM R BANK LOOK UPSTR.)	10/07/74-07/15/96	21	63	
MANA0016	No	00002	X-SEC. LOC., HORIZ (% FROM R BANK LOOK UPSTR.)	11/19/74-05/30/78	3	19	
MANA0037	No	00002	X-SEC. LOC., HORIZ (% FROM R BANK LOOK UPSTR.)	04/19/76-07/15/96	20	34	
MANA0038	No	00002	X-SEC. LOC., HORIZ (% FROM R BANK LOOK UPSTR.)	04/19/76-07/15/96	20	36	
MANA0001	No	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	07/10/79-07/17/96	17	184	
MANA0006	No	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	01/08/75-06/10/76	1	2	
MANA0007	No	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	09/25/90-07/15/96	5	24	
MANA0012	No	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	01/01/73-06/21/78	5	480	
MANA0015	No	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	07/08/76-04/18/83	6	3	
MANA0019	No	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	01/08/75-06/10/76	1	2	
MANA0025	No	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	01/08/75-06/10/76	1	2	
MANA0029	Yes	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	03/25/75-03/25/75	0	2	
MANA0035	No	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	02/06/73-06/29/78	5	843	
MANA0037	No	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	09/25/90-07/15/96	5	25	
MANA0038	No	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	09/25/90-07/15/96	5	25	
MANA0041	No	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	04/29/75-08/02/94	19	3	
MANA0050	No	00003	SAMPLING STATION LOCATION, VERTICAL (FEET)	04/29/75-08/02/94	19	4	
MANA0003	No	00005	X-SEC. LOC., VERTICAL (PERCENT OF TOTAL DEPTH)	10/07/74-05/30/78	3	30	
MANA0006	No	00005	X-SEC. LOC., VERTICAL (PERCENT OF TOTAL DEPTH)	07/21/71-05/30/78	6	64	
MANA0007	No	00005	X-SEC. LOC., VERTICAL (PERCENT OF TOTAL DEPTH)	10/07/74-05/30/78	3	40	
MANA0016	No	00005	X-SEC. LOC., VERTICAL (PERCENT OF TOTAL DEPTH)	11/19/74-05/30/78	3	19	
MANA0037	No	00005	X-SEC. LOC., VERTICAL (PERCENT OF TOTAL DEPTH)	04/19/76-04/18/78	1	10	
MANA0038	No	00005	X-SEC. LOC., VERTICAL (PERCENT OF TOTAL DEPTH)	04/19/76-04/18/78	1	12	
MANA0012	No	00008	NUMBER USED IN SAMPLE ACCOUNTING PROCEDURE	01/08/78-06/21/78	0	8	
MANA0035	No	00008	NUMBER USED IN SAMPLE ACCOUNTING PROCEDURE	03/26/78-06/29/78	0	9	
MANA0001	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	18	182	
MANA0002	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/30/77-08/30/77	0	1	
MANA0003	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-06/26/79	4	43	
MANA0004	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/30/79-08/30/79	0	1	
MANA0005	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/06/68-08/17/92	24	4	
MANA0006	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	07/21/71-05/09/79	7	71	
MANA0007	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	21	75	
MANA0008	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/21/73-11/21/73	0	4	
MANA0009	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/30/77-08/30/77	0	1	
MANA0010	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/21/73-11/21/73	0	5	
MANA0011	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/21/73-11/21/73	0	5	
MANA0012	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	5	204	
MANA0013	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-12/30/74	1	95	
MANA0014	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/22/73-06/29/73	0	3	
MANA0015	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/06/77-04/18/83	6	2	
MANA0016	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	11/19/74-05/09/79	4	23	
MANA0017	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	11	133	
MANA0018	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/30/79-08/30/79	0	1	
MANA0020	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/07/87-11/13/94	7	92	
MANA0021	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	11	109	
MANA0022	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	11	149	
MANA0023	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	06/24/80-06/24/80	0	1	
MANA0024	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	11	134	
MANA0026	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	05/15/69-08/28/79	10	2	
MANA0027	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-03/28/85	2	36	
MANA0028	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	11	137	
MANA0029	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/25/75-03/25/75	0	2	
MANA0030	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	11	149	
MANA0031	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/14/68-05/15/69	1	7	
MANA0032	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	01/23/92-11/13/94	2	51	
MANA0033	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/11/90-11/13/94	4	56	
MANA0034	Yes	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	01/23/92-11/13/94	2	50	
MANA0035	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	5	215	
MANA0036	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-08/24/94	21	95	
MANA0037	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/19/76-07/15/96	20	36	
MANA0038	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/19/76-07/15/96	20	40	
MANA0039	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/28/79-08/28/79	0	1	
MANA0040	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/28/79-08/28/79	0	1	
MANA0049	No	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/28/79-08/28/79	0	1	
MANA0017	Yes	00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	1	11	
MANA0020	Yes	00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	1	11	
MANA0021	Yes	00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	1	11	
MANA0022	Yes	00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	1	11	
MANA0024	Yes	00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	1	11	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

# **Station/Parameter Period of Record Tabulation** **From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0028	Yes	00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	1	11	
MANA0030	Yes	00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	1	11	
MANA0032	Yes	00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	1	11	
MANA0033	Yes	00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	1	11	
MANA0034	Yes	00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	1	11	
MANA0001	No	00023	SAMPLE WEIGHT IN POUNDS	06/30/87-07/12/90	3	6	
MANA0001	No	00024	SAMPLE LENGTH IN INCHES	06/30/87-07/12/90	3	6	
MANA0036	No	00025	BAROMETRIC PRESSURE (MM OF HG)	08/24/94-08/24/94	0	1	
MANA0005	No	00027	CODE NO FOR AGENCY COLLECTING SAMPLE-SEE APPEND.	08/17/92-08/17/92	0	3	
MANA0036	No	00027	CODE NO FOR AGENCY COLLECTING SAMPLE-SEE APPEND.	08/24/94-08/24/94	0	1	
MANA0004	No	00028	CODE NO FOR AGENCY ANALYZING SAMPLE (SEE APPEND)	08/30/79-08/30/79	0	1	
MANA0005	No	00028	CODE NO FOR AGENCY ANALYZING SAMPLE (SEE APPEND)	08/30/79-08/17/92	12	4	
MANA0018	No	00028	CODE NO FOR AGENCY ANALYZING SAMPLE (SEE APPEND)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00028	CODE NO FOR AGENCY ANALYZING SAMPLE (SEE APPEND)	06/24/80-06/24/80	0	1	
MANA0026	No	00028	CODE NO FOR AGENCY ANALYZING SAMPLE (SEE APPEND)	08/28/79-08/28/79	0	1	
MANA0036	No	00028	CODE NO FOR AGENCY ANALYZING SAMPLE (SEE APPEND)	08/29/79-08/24/94	14	2	
MANA0039	No	00028	CODE NO FOR AGENCY ANALYZING SAMPLE (SEE APPEND)	08/28/79-08/28/79	0	1	
MANA0040	No	00028	CODE NO FOR AGENCY ANALYZING SAMPLE (SEE APPEND)	08/28/79-08/28/79	0	1	
MANA0049	No	00028	CODE NO FOR AGENCY ANALYZING SAMPLE (SEE APPEND)	08/28/79-08/28/79	0	1	
MANA0001	No	00041	WEATHER (WMO CODE 4501)	04/18/78-07/17/96	18	188	
MANA0003	No	00041	WEATHER (WMO CODE 4501)	10/07/74-06/26/79	4	43	
MANA0006	No	00041	WEATHER (WMO CODE 4501)	07/21/71-05/09/79	7	71	
MANA0007	No	00041	WEATHER (WMO CODE 4501)	10/07/74-07/15/96	21	77	
MANA0016	No	00041	WEATHER (WMO CODE 4501)	11/19/74-05/09/79	4	23	
MANA0037	No	00041	WEATHER (WMO CODE 4501)	04/19/76-07/15/96	20	38	
MANA0038	No	00041	WEATHER (WMO CODE 4501)	04/19/76-07/15/96	20	41	
MANA0050	No	00041	WEATHER (WMO CODE 4501)	08/02/94-08/02/94	0	1	
MANA0017	Yes	00045	PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	0	20	
MANA0020	Yes	00045	PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	0	20	
MANA0021	Yes	00045	PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	0	20	
MANA0022	Yes	00045	PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	0	20	
MANA0024	Yes	00045	PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	0	20	
MANA0028	Yes	00045	PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	0	20	
MANA0030	Yes	00045	PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	0	20	
MANA0032	Yes	00045	PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	0	20	
MANA0033	Yes	00045	PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	0	20	
MANA0034	Yes	00045	PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	0	20	
MANA0012	No	00051	SURFACE AREA IN SQUARE FEET	01/01/73-01/02/76	3	124	
MANA0035	No	00051	SURFACE AREA IN SQUARE FEET	01/07/75-01/01/76	0	227	
MANA0012	No	00053	SURFACE AREA, ACRES	01/01/73-01/02/76	3	124	
MANA0035	No	00053	SURFACE AREA, ACRES	01/07/75-01/01/76	0	227	
MANA0005	No	00060	FLOW, STREAM, MEAN DAILY CFS	11/19/52-04/07/69	16	3	
MANA0026	No	00060	FLOW, STREAM, MEAN DAILY CFS	05/15/69-05/15/69	0	1	
MANA0031	No	00060	FLOW, STREAM, MEAN DAILY CFS	03/14/68-11/26/68	0	6	
MANA0001	No	00061	FLOW, STREAM, INSTANTANEOUS CFS	08/02/83-08/02/83	0	1	
MANA0002	No	00061	FLOW, STREAM, INSTANTANEOUS CFS	08/30/77-08/30/77	0	1	
MANA0009	No	00061	FLOW, STREAM, INSTANTANEOUS CFS	08/30/77-08/30/77	0	1	
MANA0012	No	00061	FLOW, STREAM, INSTANTANEOUS CFS	01/01/73-06/21/78	5	372	
MANA0017	Yes	00061	FLOW, STREAM, INSTANTANEOUS CFS	04/12/87-11/01/90	3	24	
MANA0020	Yes	00061	FLOW, STREAM, INSTANTANEOUS CFS	04/12/87-11/26/90	3	28	
MANA0021	Yes	00061	FLOW, STREAM, INSTANTANEOUS CFS	03/27/88-11/01/90	2	12	
MANA0022	Yes	00061	FLOW, STREAM, INSTANTANEOUS CFS	04/12/87-11/01/90	3	33	
MANA0024	Yes	00061	FLOW, STREAM, INSTANTANEOUS CFS	04/12/87-11/01/90	3	30	
MANA0028	Yes	00061	FLOW, STREAM, INSTANTANEOUS CFS	05/02/87-11/26/90	3	30	
MANA0030	Yes	00061	FLOW, STREAM, INSTANTANEOUS CFS	04/12/87-11/01/90	3	31	
MANA0033	Yes	00061	FLOW, STREAM, INSTANTANEOUS CFS	10/11/90-11/26/90	0	4	
MANA0035	No	00061	FLOW, STREAM, INSTANTANEOUS CFS	01/07/75-06/29/78	3	731	
MANA0036	No	00061	FLOW, STREAM, INSTANTANEOUS CFS	08/24/94-08/24/94	0	1	
MANA0017	Yes	00064	DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	1	25	
MANA0020	Yes	00064	DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	1	25	
MANA0021	Yes	00064	DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	1	25	
MANA0022	Yes	00064	DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	1	25	
MANA0024	Yes	00064	DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	1	25	
MANA0028	Yes	00064	DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	1	25	
MANA0030	Yes	00064	DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	1	25	
MANA0032	Yes	00064	DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	1	25	
MANA0033	Yes	00064	DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	1	25	
MANA0034	Yes	00064	DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	1	24	
MANA0005	No	00065	STAGE, STREAM (FEET)	06/17/74-08/17/92	18	13	
MANA0012	No	00065	STAGE, STREAM (FEET)	05/16/74-06/21/78	4	159	
MANA0013	No	00065	STAGE, STREAM (FEET)	03/25/74-12/30/74	0	45	
MANA0035	No	00065	STAGE, STREAM (FEET)	03/25/74-06/29/78	4	214	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

# **Station/Parameter Period of Record Tabulation** **From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0036	No	00065	STAGE, STREAM (FEET)	05/16/74-08/24/94	20	41	
MANA0050	No	00067	TIDE STAGE (REFER TO APPENDIX FOR CODES)	08/02/94-08/02/94	0	1	
MANA0001	No	00070	TURBIDITY, (JACKSON CANDLE UNITS)	09/15/88-05/05/92	3	40	
MANA0007	No	00070	TURBIDITY, (JACKSON CANDLE UNITS)	09/25/90-04/07/92	1	7	
MANA0037	No	00070	TURBIDITY, (JACKSON CANDLE UNITS)	09/25/90-04/07/92	1	7	
MANA0038	No	00070	TURBIDITY, (JACKSON CANDLE UNITS)	09/25/90-04/07/92	1	6	
MANA0008	No	00075	TURBIDITY, HELLOG (PPM AS SILICON DIOXIDE)	02/21/73-11/21/73	0	4	
MANA0010	No	00075	TURBIDITY, HELLOG (PPM AS SILICON DIOXIDE)	02/21/73-11/21/73	0	4	
MANA0011	No	00075	TURBIDITY, HELLOG (PPM AS SILICON DIOXIDE)	02/21/73-11/21/73	0	4	
MANA0014	No	00075	TURBIDITY, HELLOG (PPM AS SILICON DIOXIDE)	02/22/73-06/29/73	0	3	
MANA0001	No	00076	TURBIDITY, HACH TURBIDIMETER (FORMAZIN TURB UNIT)	07/28/94-06/05/96	1	16	
MANA0007	No	00076	TURBIDITY, HACH TURBIDIMETER (FORMAZIN TURB UNIT)	08/24/94-07/15/96	1	8	
MANA0037	No	00076	TURBIDITY, HACH TURBIDIMETER (FORMAZIN TURB UNIT)	08/24/94-07/15/96	1	8	
MANA0038	No	00076	TURBIDITY, HACH TURBIDIMETER (FORMAZIN TURB UNIT)	08/24/94-07/15/96	1	8	
MANA0050	No	00076	TURBIDITY, HACH TURBIDIMETER (FORMAZIN TURB UNIT)	08/02/94-08/02/94	0	1	
MANA0006	No	00077	TRANSPARENCY, SECCHI DISC (INCHES)	05/01/75-05/01/75	0	1	
MANA0007	No	00077	TRANSPARENCY, SECCHI DISC (INCHES)	05/01/75-05/01/75	0	1	
MANA0016	No	00077	TRANSPARENCY, SECCHI DISC (INCHES)	05/01/75-05/01/75	0	1	
MANA0001	No	00080	COLOR (PLATINUM-COBALT UNITS)	02/05/91-12/15/92	1	19	
MANA0002	No	00080	COLOR (PLATINUM-COBALT UNITS)	08/30/77-08/30/77	0	1	
MANA0004	No	00080	COLOR (PLATINUM-COBALT UNITS)	08/30/79-08/30/79	0	1	
MANA0005	No	00080	COLOR (PLATINUM-COBALT UNITS)	11/19/52-08/30/79	26	4	
MANA0007	No	00080	COLOR (PLATINUM-COBALT UNITS)	04/17/91-01/06/93	1	8	
MANA0009	No	00080	COLOR (PLATINUM-COBALT UNITS)	08/30/77-08/30/77	0	1	
MANA0018	No	00080	COLOR (PLATINUM-COBALT UNITS)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00080	COLOR (PLATINUM-COBALT UNITS)	06/24/80-06/24/80	0	1	
MANA0026	No	00080	COLOR (PLATINUM-COBALT UNITS)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00080	COLOR (PLATINUM-COBALT UNITS)	03/25/75-03/25/75	0	1	
MANA0031	No	00080	COLOR (PLATINUM-COBALT UNITS)	03/14/68-05/15/69	1	7	
MANA0036	No	00080	COLOR (PLATINUM-COBALT UNITS)	08/29/79-08/29/79	0	1	
MANA0037	No	00080	COLOR (PLATINUM-COBALT UNITS)	04/17/91-01/06/93	1	8	
MANA0038	No	00080	COLOR (PLATINUM-COBALT UNITS)	04/17/91-01/06/93	1	7	
MANA0039	No	00080	COLOR (PLATINUM-COBALT UNITS)	08/28/79-08/28/79	0	1	
MANA0040	No	00080	COLOR (PLATINUM-COBALT UNITS)	08/28/79-08/28/79	0	1	
MANA0049	No	00080	COLOR (PLATINUM-COBALT UNITS)	08/28/79-08/28/79	0	1	
MANA0001	No	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	17	145	T,A,S
MANA0007	No	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	01/09/92-07/15/96	4	19	
MANA0017	Yes	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	11	133	A
MANA0020	Yes	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	03/07/87-11/13/94	7	92	
MANA0021	Yes	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	11	110	A
MANA0022	Yes	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	11	150	A
MANA0024	Yes	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	11	135	A
MANA0027	Yes	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-03/28/85	2	36	
MANA0028	Yes	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	11	136	A
MANA0030	Yes	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	11	148	A
MANA0032	Yes	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	01/23/92-11/13/94	2	51	
MANA0033	Yes	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	10/11/90-11/13/94	4	56	
MANA0034	Yes	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	01/23/92-11/13/94	2	50	
MANA0037	No	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	01/09/92-07/15/96	4	19	
MANA0038	No	00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	01/09/92-07/15/96	4	19	
MANA0001	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	6	60	
MANA0002	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/30/77-08/30/77	0	1	
MANA0004	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/30/79-08/30/79	0	1	
MANA0005	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	11/19/52-08/17/92	39	5	
MANA0007	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/25/90-07/15/96	5	23	
MANA0009	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/30/77-08/30/77	0	1	
MANA0012	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	06/17/74-07/08/74	0	4	
MANA0013	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	06/17/74-07/09/74	0	4	
MANA0018	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	06/24/80-06/24/80	0	1	
MANA0026	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	03/25/75-03/25/75	0	2	
MANA0031	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	03/14/68-05/15/69	1	7	
MANA0035	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	06/17/74-07/09/74	0	4	
MANA0036	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	06/17/74-08/24/94	20	6	
MANA0037	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/25/90-07/15/96	5	23	
MANA0038	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/25/90-07/15/96	5	22	
MANA0039	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/28/79-08/28/79	0	1	
MANA0040	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/28/79-08/28/79	0	1	
MANA0049	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/28/79-08/28/79	0	1	
MANA0050	No	00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/02/94-08/02/94	0	1	
MANA0001	No	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/04/91-07/17/96	4	38	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

# **Station/Parameter Period of Record Tabulation** **From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0007	No	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	01/09/92-07/15/96	4	19	
MANA0017	Yes	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	11	132	A
MANA0020	Yes	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	03/07/87-11/13/94	7	92	
MANA0021	Yes	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	11	107	A
MANA0022	Yes	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	11	143	A
MANA0024	Yes	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	11	133	A
MANA0027	Yes	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-03/28/85	2	33	
MANA0028	Yes	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	11	135	A
MANA0030	Yes	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	11	145	A
MANA0032	Yes	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	01/23/92-11/13/94	2	51	
MANA0033	Yes	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	10/11/90-11/13/94	4	56	
MANA0034	Yes	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	01/23/92-11/13/94	2	50	
MANA0037	No	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	01/09/92-07/15/96	4	19	
MANA0038	No	00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	01/09/92-07/15/96	4	19	
MANA0001	No	00300	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	13	144	T,A
MANA0003	No	00300	OXYGEN, DISSOLVED MG/L	10/07/74-06/26/79	4	43	
MANA0004	No	00300	OXYGEN, DISSOLVED MG/L	08/30/79-08/30/79	0	1	
MANA0005	No	00300	OXYGEN, DISSOLVED MG/L	08/30/79-08/17/92	12	2	
MANA0006	No	00300	OXYGEN, DISSOLVED MG/L	07/21/71-05/09/79	7	70	
MANA0007	No	00300	OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	16	55	S
MANA0008	No	00300	OXYGEN, DISSOLVED MG/L	02/21/73-11/21/73	0	4	
MANA0010	No	00300	OXYGEN, DISSOLVED MG/L	02/21/73-11/21/73	0	5	
MANA0011	No	00300	OXYGEN, DISSOLVED MG/L	02/21/73-11/21/73	0	5	
MANA0012	No	00300	OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	5	204	A
MANA0013	No	00300	OXYGEN, DISSOLVED MG/L	02/06/73-12/30/74	1	94	
MANA0014	No	00300	OXYGEN, DISSOLVED MG/L	02/22/73-06/29/73	0	3	
MANA0015	No	00300	OXYGEN, DISSOLVED MG/L	07/08/76-04/18/83	6	3	
MANA0016	No	00300	OXYGEN, DISSOLVED MG/L	11/19/74-05/09/79	4	22	
MANA0018	No	00300	OXYGEN, DISSOLVED MG/L	08/30/79-08/30/79	0	1	
MANA0026	No	00300	OXYGEN, DISSOLVED MG/L	08/28/79-08/28/79	0	1	
MANA0035	No	00300	OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	5	213	A
MANA0036	No	00300	OXYGEN, DISSOLVED MG/L	02/06/73-08/24/94	21	95	T
MANA0037	No	00300	OXYGEN, DISSOLVED MG/L	04/19/76-04/17/91	14	17	
MANA0038	No	00300	OXYGEN, DISSOLVED MG/L	04/19/76-07/17/91	15	21	
MANA0039	No	00300	OXYGEN, DISSOLVED MG/L	08/28/79-08/28/79	0	1	
MANA0040	No	00300	OXYGEN, DISSOLVED MG/L	08/28/79-08/28/79	0	1	
MANA0041	No	00300	OXYGEN, DISSOLVED MG/L	04/29/75-04/29/75	0	1	
MANA0049	No	00300	OXYGEN, DISSOLVED MG/L	08/28/79-08/28/79	0	1	
MANA0050	No	00300	OXYGEN, DISSOLVED MG/L	04/29/75-04/29/75	0	1	
MANA0001	No	00310	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	18	181	T,A,S
MANA0003	No	00310	BOD, 5 DAY, 20 DEG C MG/L	03/31/75-06/26/79	4	38	
MANA0006	No	00310	BOD, 5 DAY, 20 DEG C MG/L	07/21/71-05/09/79	7	44	
MANA0007	No	00310	BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	21	74	T,S
MANA0008	No	00310	BOD, 5 DAY, 20 DEG C MG/L	02/21/73-11/21/73	0	5	
MANA0010	No	00310	BOD, 5 DAY, 20 DEG C MG/L	02/21/73-11/21/73	0	5	
MANA0011	No	00310	BOD, 5 DAY, 20 DEG C MG/L	02/21/73-11/21/73	0	5	
MANA0012	No	00310	BOD, 5 DAY, 20 DEG C MG/L	02/06/75-06/21/78	3	48	
MANA0013	No	00310	BOD, 5 DAY, 20 DEG C MG/L	01/07/74-11/19/74	0	18	
MANA0014	No	00310	BOD, 5 DAY, 20 DEG C MG/L	02/22/73-06/29/73	0	4	
MANA0015	No	00310	BOD, 5 DAY, 20 DEG C MG/L	07/08/76-04/18/83	6	3	
MANA0016	No	00310	BOD, 5 DAY, 20 DEG C MG/L	03/14/75-05/09/79	4	19	
MANA0019	No	00310	BOD, 5 DAY, 20 DEG C MG/L	01/08/75-06/10/76	1	2	
MANA0025	No	00310	BOD, 5 DAY, 20 DEG C MG/L	01/08/75-06/10/76	1	2	
MANA0035	No	00310	BOD, 5 DAY, 20 DEG C MG/L	02/06/75-06/21/78	3	53	
MANA0036	No	00310	BOD, 5 DAY, 20 DEG C MG/L	01/07/74-11/19/74	0	18	
MANA0037	No	00310	BOD, 5 DAY, 20 DEG C MG/L	09/25/90-07/15/96	5	23	
MANA0038	No	00310	BOD, 5 DAY, 20 DEG C MG/L	09/25/90-07/15/96	5	22	
MANA0041	No	00310	BOD, 5 DAY, 20 DEG C MG/L	04/29/75-04/29/75	0	1	
MANA0050	No	00310	BOD, 5 DAY, 20 DEG C MG/L	04/29/75-08/02/94	19	2	
MANA0012	No	00335	COD, .025N K2CR2O7 MG/L	11/04/77-06/21/78	0	18	
MANA0035	No	00335	COD, .025N K2CR2O7 MG/L	11/04/77-06/29/78	0	15	
MANA0001	No	00340	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	16	170	T,A,S
MANA0006	No	00340	COD, .25N K2CR2O7 MG/L	01/08/75-06/10/76	1	2	
MANA0007	No	00340	COD, .25N K2CR2O7 MG/L	09/25/90-07/15/96	5	23	
MANA0015	No	00340	COD, .25N K2CR2O7 MG/L	07/08/76-04/18/83	6	3	
MANA0019	No	00340	COD, .25N K2CR2O7 MG/L	01/08/75-06/10/76	1	2	
MANA0025	No	00340	COD, .25N K2CR2O7 MG/L	01/08/75-06/10/76	1	2	
MANA0037	No	00340	COD, .25N K2CR2O7 MG/L	09/25/90-07/15/96	5	23	
MANA0038	No	00340	COD, .25N K2CR2O7 MG/L	09/25/90-07/15/96	5	22	
MANA0041	No	00340	COD, .25N K2CR2O7 MG/L	04/29/75-08/02/94	19	2	
MANA0042	No	00340	COD, .25N K2CR2O7 MG/L	05/31/79-02/11/81	1	8	
MANA0043	No	00340	COD, .25N K2CR2O7 MG/L	05/31/79-01/19/80	0	6	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0045	No	00340	COD, .25N K2CR2O7 MG/L	05/25/79-01/22/80	0	12	
MANA0046	No	00340	COD, .25N K2CR2O7 MG/L	09/05/79-04/09/80	0	6	
MANA0047	No	00340	COD, .25N K2CR2O7 MG/L	05/25/79-02/11/81	1	31	
MANA0048	No	00340	COD, .25N K2CR2O7 MG/L	05/23/79-02/11/81	1	92	
MANA0050	No	00340	COD, .25N K2CR2O7 MG/L	04/29/75-08/02/94	19	2	
MANA0001	No	00400	PH (STANDARD UNITS)	04/18/78-07/17/96	18	173	T,A,S
MANA0003	No	00400	PH (STANDARD UNITS)	10/07/74-06/26/79	4	43	
MANA0004	No	00400	PH (STANDARD UNITS)	08/30/79-08/30/79	0	1	
MANA0005	No	00400	PH (STANDARD UNITS)	11/19/52-08/17/92	39	5	
MANA0006	No	00400	PH (STANDARD UNITS)	07/21/71-05/09/79	7	72	
MANA0007	No	00400	PH (STANDARD UNITS)	10/07/74-07/15/96	21	75	T,S
MANA0008	No	00400	PH (STANDARD UNITS)	02/21/73-11/21/73	0	4	
MANA0010	No	00400	PH (STANDARD UNITS)	02/21/73-11/21/73	0	4	
MANA0011	No	00400	PH (STANDARD UNITS)	02/21/73-11/21/73	0	4	
MANA0012	No	00400	PH (STANDARD UNITS)	02/06/73-06/21/78	5	171	A
MANA0013	No	00400	PH (STANDARD UNITS)	02/06/73-12/30/74	1	62	
MANA0014	No	00400	PH (STANDARD UNITS)	02/22/73-06/29/73	0	3	
MANA0015	No	00400	PH (STANDARD UNITS)	07/08/76-04/18/83	6	3	
MANA0016	No	00400	PH (STANDARD UNITS)	11/19/74-05/09/79	4	23	
MANA0018	No	00400	PH (STANDARD UNITS)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00400	PH (STANDARD UNITS)	06/24/80-06/24/80	0	1	
MANA0026	No	00400	PH (STANDARD UNITS)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00400	PH (STANDARD UNITS)	03/25/75-03/25/75	0	2	
MANA0031	No	00400	PH (STANDARD UNITS)	03/14/68-05/15/69	1	7	
MANA0035	No	00400	PH (STANDARD UNITS)	02/06/73-06/21/78	5	177	A
MANA0036	No	00400	PH (STANDARD UNITS)	02/06/73-08/24/94	21	65	T
MANA0037	No	00400	PH (STANDARD UNITS)	04/19/76-07/15/96	20	36	S
MANA0038	No	00400	PH (STANDARD UNITS)	04/19/76-07/15/96	20	40	S
MANA0039	No	00400	PH (STANDARD UNITS)	08/28/79-08/28/79	0	1	
MANA0040	No	00400	PH (STANDARD UNITS)	08/28/79-08/28/79	0	1	
MANA0041	No	00400	PH (STANDARD UNITS)	04/29/75-04/29/75	0	1	
MANA0049	No	00400	PH (STANDARD UNITS)	08/28/79-08/28/79	0	1	
MANA0050	No	00400	PH (STANDARD UNITS)	04/29/75-04/29/75	0	1	
MANA0001	No	00403	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	13	99	T,A
MANA0003	No	00403	PH, LAB, STANDARD UNITS SU	03/15/77-03/15/77	0	1	
MANA0006	No	00403	PH, LAB, STANDARD UNITS SU	07/05/74-01/08/75	0	2	
MANA0007	No	00403	PH, LAB, STANDARD UNITS SU	09/25/90-07/15/96	5	23	
MANA0015	No	00403	PH, LAB, STANDARD UNITS SU	04/06/77-04/18/83	6	2	
MANA0019	No	00403	PH, LAB, STANDARD UNITS SU	01/08/75-01/08/75	0	1	
MANA0025	No	00403	PH, LAB, STANDARD UNITS SU	06/10/76-06/10/76	0	1	
MANA0036	No	00403	PH, LAB, STANDARD UNITS SU	08/24/94-08/24/94	0	1	
MANA0037	No	00403	PH, LAB, STANDARD UNITS SU	09/25/90-07/15/96	5	23	
MANA0038	No	00403	PH, LAB, STANDARD UNITS SU	09/25/90-07/15/96	5	22	
MANA0041	No	00403	PH, LAB, STANDARD UNITS SU	04/29/75-04/29/75	0	1	
MANA0048	No	00403	PH, LAB, STANDARD UNITS SU	01/06/80-12/01/80	0	35	
MANA0050	No	00403	PH, LAB, STANDARD UNITS SU	04/29/75-08/02/94	19	2	
MANA0004	No	00405	CARBON DIOXIDE (MG/L AS CO2)	08/30/79-08/30/79	0	1	
MANA0005	No	00405	CARBON DIOXIDE (MG/L AS CO2)	08/30/79-08/30/79	0	1	
MANA0018	No	00405	CARBON DIOXIDE (MG/L AS CO2)	08/30/79-08/30/79	0	1	
MANA0026	No	00405	CARBON DIOXIDE (MG/L AS CO2)	08/28/79-08/28/79	0	1	
MANA0029	Yes	00405	CARBON DIOXIDE (MG/L AS CO2)	03/25/75-03/25/75	0	1	
MANA0036	No	00405	CARBON DIOXIDE (MG/L AS CO2)	08/29/79-08/29/79	0	1	
MANA0039	No	00405	CARBON DIOXIDE (MG/L AS CO2)	08/28/79-08/28/79	0	1	
MANA0040	No	00405	CARBON DIOXIDE (MG/L AS CO2)	08/28/79-08/28/79	0	1	
MANA0049	No	00405	CARBON DIOXIDE (MG/L AS CO2)	08/28/79-08/28/79	0	1	
MANA0017	Yes	00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	11	133	A
MANA0020	Yes	00406	PH, FIELD, STANDARD UNITS SU	03/07/87-11/13/94	7	92	
MANA0021	Yes	00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	11	110	A
MANA0022	Yes	00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	11	150	A
MANA0024	Yes	00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	11	135	A
MANA0027	Yes	00406	PH, FIELD, STANDARD UNITS SU	12/02/82-03/28/85	2	36	
MANA0028	Yes	00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	11	137	A
MANA0030	Yes	00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	11	149	A
MANA0032	Yes	00406	PH, FIELD, STANDARD UNITS SU	01/23/92-11/13/94	2	51	
MANA0033	Yes	00406	PH, FIELD, STANDARD UNITS SU	10/11/90-11/13/94	4	56	
MANA0034	Yes	00406	PH, FIELD, STANDARD UNITS SU	01/23/92-11/13/94	2	50	
MANA0001	No	00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	13	99	T,A
MANA0002	No	00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	08/30/77-08/30/77	0	1	
MANA0003	No	00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	03/15/77-03/15/77	0	1	
MANA0004	No	00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	08/30/79-08/30/79	0	1	
MANA0005	No	00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	03/06/68-08/30/79	11	3	
MANA0006	No	00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	07/05/74-01/08/75	0	2	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0007	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	09/25/90-07/15/96	5	23	
MANA0009	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	08/30/77-08/30/77	0	1	
MANA0012	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	02/06/73-06/21/78	5	198	A
MANA0013	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	02/06/73-12/30/74	1	91	
MANA0015	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	04/06/77-04/18/83	6	2	
MANA0018	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	08/30/79-08/30/79	0	1	
MANA0019	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	01/08/75-01/08/75	0	1	
MANA0023	Yes	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	06/24/80-06/24/80	0	1	
MANA0025	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	06/10/76-06/10/76	0	1	
MANA0026	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	03/25/75-03/25/75	0	1	
MANA0031	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	03/14/68-05/15/69	1	7	
MANA0035	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	02/06/73-06/21/78	5	209	A
MANA0036	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	02/06/73-08/29/79	6	90	
MANA0037	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	09/25/90-07/15/96	5	23	
MANA0038	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	09/25/90-07/15/96	5	22	
MANA0039	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	08/28/79-08/28/79	0	1	
MANA0040	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	08/28/79-08/28/79	0	1	
MANA0041	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	04/29/75-04/29/75	0	1	
MANA0049	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	08/28/79-08/28/79	0	1	
MANA0050	No	00410	ALKALINITY, TOTAL (MG/L AS CACO3)	04/29/75-08/02/94	19	2	
MANA0012	No	00430	ALKALINITY, CARBONATE (MG/L AS CACO3)	02/06/73-06/21/78	5	101	
MANA0013	No	00430	ALKALINITY, CARBONATE (MG/L AS CACO3)	02/06/73-10/01/73	0	20	
MANA0035	No	00430	ALKALINITY, CARBONATE (MG/L AS CACO3)	02/06/73-06/21/78	5	111	
MANA0036	No	00430	ALKALINITY, CARBONATE (MG/L AS CACO3)	02/06/73-07/08/74	1	21	
MANA0002	No	00440	BICARBONATE ION (MG/L AS HCO3)	08/30/77-08/30/77	0	1	
MANA0004	No	00440	BICARBONATE ION (MG/L AS HCO3)	08/30/79-08/30/79	0	1	
MANA0005	No	00440	BICARBONATE ION (MG/L AS HCO3)	11/19/52-08/30/79	26	4	
MANA0009	No	00440	BICARBONATE ION (MG/L AS HCO3)	08/30/77-08/30/77	0	1	
MANA0018	No	00440	BICARBONATE ION (MG/L AS HCO3)	08/30/79-08/30/79	0	1	
MANA0026	No	00440	BICARBONATE ION (MG/L AS HCO3)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00440	BICARBONATE ION (MG/L AS HCO3)	03/25/75-03/25/75	0	1	
MANA0031	No	00440	BICARBONATE ION (MG/L AS HCO3)	03/14/68-05/15/69	1	7	
MANA0036	No	00440	BICARBONATE ION (MG/L AS HCO3)	08/29/79-08/29/79	0	1	
MANA0039	No	00440	BICARBONATE ION (MG/L AS HCO3)	08/28/79-08/28/79	0	1	
MANA0040	No	00440	BICARBONATE ION (MG/L AS HCO3)	08/28/79-08/28/79	0	1	
MANA0049	No	00440	BICARBONATE ION (MG/L AS HCO3)	08/28/79-08/28/79	0	1	
MANA0004	No	00445	CARBONATE ION (MG/L AS CO3)	08/30/79-08/30/79	0	1	
MANA0005	No	00445	CARBONATE ION (MG/L AS CO3)	03/06/68-08/30/79	11	3	
MANA0018	No	00445	CARBONATE ION (MG/L AS CO3)	08/30/79-08/30/79	0	1	
MANA0026	No	00445	CARBONATE ION (MG/L AS CO3)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00445	CARBONATE ION (MG/L AS CO3)	03/25/75-03/25/75	0	1	
MANA0031	No	00445	CARBONATE ION (MG/L AS CO3)	03/14/68-05/15/69	1	7	
MANA0036	No	00445	CARBONATE ION (MG/L AS CO3)	08/29/79-08/29/79	0	1	
MANA0039	No	00445	CARBONATE ION (MG/L AS CO3)	08/28/79-08/28/79	0	1	
MANA0040	No	00445	CARBONATE ION (MG/L AS CO3)	08/28/79-08/28/79	0	1	
MANA0049	No	00445	CARBONATE ION (MG/L AS CO3)	08/28/79-08/28/79	0	1	
MANA0036	No	00453	BICARBONATE, WATER, DISS, INCR TIT, FIELD, AS HCO3, MG/L	08/24/94-08/24/94	0	1	
MANA0017	Yes	00480	SALINITY - PARTS PER THOUSAND	03/21/87-11/01/90	3	38	
MANA0020	Yes	00480	SALINITY - PARTS PER THOUSAND	03/07/87-11/26/90	3	40	
MANA0021	Yes	00480	SALINITY - PARTS PER THOUSAND	03/27/88-11/01/90	2	15	
MANA0022	Yes	00480	SALINITY - PARTS PER THOUSAND	03/07/87-11/01/90	3	41	
MANA0024	Yes	00480	SALINITY - PARTS PER THOUSAND	03/14/87-11/01/90	3	40	
MANA0028	Yes	00480	SALINITY - PARTS PER THOUSAND	04/04/87-11/26/90	3	37	
MANA0030	Yes	00480	SALINITY - PARTS PER THOUSAND	04/04/87-11/01/90	3	36	
MANA0033	Yes	00480	SALINITY - PARTS PER THOUSAND	10/11/90-11/26/90	0	4	
MANA0001	No	00500	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	18	90	T,A,S
MANA0003	No	00500	RESIDUE, TOTAL (MG/L)	03/31/75-06/26/79	4	4	
MANA0006	No	00500	RESIDUE, TOTAL (MG/L)	01/08/75-06/10/76	1	7	
MANA0007	No	00500	RESIDUE, TOTAL (MG/L)	03/14/75-07/15/96	21	30	
MANA0015	No	00500	RESIDUE, TOTAL (MG/L)	07/08/76-04/18/83	6	3	
MANA0016	No	00500	RESIDUE, TOTAL (MG/L)	03/14/75-07/02/75	0	3	
MANA0019	No	00500	RESIDUE, TOTAL (MG/L)	01/08/75-06/10/76	1	2	
MANA0025	No	00500	RESIDUE, TOTAL (MG/L)	06/10/76-06/10/76	0	1	
MANA0037	No	00500	RESIDUE, TOTAL (MG/L)	08/17/76-07/15/96	19	24	
MANA0038	No	00500	RESIDUE, TOTAL (MG/L)	08/17/76-07/15/96	19	23	
MANA0041	No	00500	RESIDUE, TOTAL (MG/L)	04/29/75-04/29/75	0	1	
MANA0050	No	00500	RESIDUE, TOTAL (MG/L)	04/29/75-04/29/75	0	1	
MANA0001	No	00505	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	18	91	T,A,S
MANA0003	No	00505	RESIDUE, TOTAL VOLATILE (MG/L)	03/31/75-06/26/79	4	4	
MANA0006	No	00505	RESIDUE, TOTAL VOLATILE (MG/L)	01/08/75-06/10/76	1	7	
MANA0007	No	00505	RESIDUE, TOTAL VOLATILE (MG/L)	03/14/75-07/15/96	21	30	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0015	No	00505	RESIDUE, TOTAL VOLATILE (MG/L)	07/08/76-04/18/83	6	3	
MANA0016	No	00505	RESIDUE, TOTAL VOLATILE (MG/L)	03/14/75-07/02/75	0	3	
MANA0019	No	00505	RESIDUE, TOTAL VOLATILE (MG/L)	01/08/75-06/10/76	1	2	
MANA0025	No	00505	RESIDUE, TOTAL VOLATILE (MG/L)	06/10/76-06/10/76	0	1	
MANA0037	No	00505	RESIDUE, TOTAL VOLATILE (MG/L)	08/17/76-07/15/96	19	24	
MANA0038	No	00505	RESIDUE, TOTAL VOLATILE (MG/L)	08/17/76-07/15/96	19	23	
MANA0041	No	00505	RESIDUE, TOTAL VOLATILE (MG/L)	04/29/75-04/29/75	0	1	
MANA0050	No	00505	RESIDUE, TOTAL VOLATILE (MG/L)	04/29/75-04/29/75	0	1	
MANA0001	No	00510	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	18	91	T,A,S
MANA0003	No	00510	RESIDUE, TOTAL FIXED (MG/L)	03/31/75-06/26/79	4	5	
MANA0006	No	00510	RESIDUE, TOTAL FIXED (MG/L)	01/08/75-06/10/76	1	7	
MANA0007	No	00510	RESIDUE, TOTAL FIXED (MG/L)	03/14/75-07/15/96	21	29	
MANA0015	No	00510	RESIDUE, TOTAL FIXED (MG/L)	07/08/76-04/18/83	6	3	
MANA0016	No	00510	RESIDUE, TOTAL FIXED (MG/L)	03/14/75-07/02/75	0	3	
MANA0019	No	00510	RESIDUE, TOTAL FIXED (MG/L)	01/08/75-06/10/76	1	2	
MANA0025	No	00510	RESIDUE, TOTAL FIXED (MG/L)	06/10/76-06/10/76	0	1	
MANA0037	No	00510	RESIDUE, TOTAL FIXED (MG/L)	08/17/76-07/15/96	19	24	
MANA0038	No	00510	RESIDUE, TOTAL FIXED (MG/L)	08/17/76-07/15/96	19	23	
MANA0041	No	00510	RESIDUE, TOTAL FIXED (MG/L)	04/29/75-04/29/75	0	1	
MANA0050	No	00510	RESIDUE, TOTAL FIXED (MG/L)	04/29/75-04/29/75	0	1	
MANA0005	No	00515	RESIDUE, TOTAL FILTRABLE (DRIED AT 105C),MG/L	07/01/74-08/27/74	0	10	
MANA0013	No	00515	RESIDUE, TOTAL FILTRABLE (DRIED AT 105C),MG/L	02/06/73-12/30/74	1	99	
MANA0036	No	00515	RESIDUE, TOTAL FILTRABLE (DRIED AT 105C),MG/L	02/06/73-12/30/74	1	96	
MANA0050	No	00515	RESIDUE, TOTAL FILTRABLE (DRIED AT 105C),MG/L	08/02/94-08/02/94	0	1	
MANA0005	No	00520	RESIDUE, VOLATILE FILTRABLE (MG/L)	07/15/74-07/15/74	0	1	
MANA0013	No	00520	RESIDUE, VOLATILE FILTRABLE (MG/L)	02/06/73-12/30/74	1	93	
MANA0036	No	00520	RESIDUE, VOLATILE FILTRABLE (MG/L)	02/06/73-12/30/74	1	95	
MANA0001	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	18	183	T,A,S
MANA0003	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/31/75-06/26/79	4	35	
MANA0006	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/08/75-05/09/79	4	40	
MANA0007	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	21	69	T,S
MANA0008	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/21/73-11/21/73	0	5	
MANA0010	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/21/73-11/21/73	0	5	
MANA0011	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/21/73-11/21/73	0	5	
MANA0012	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/01/73-06/21/78	5	408	A
MANA0014	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/22/73-06/29/73	0	4	
MANA0015	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	07/08/76-04/18/83	6	3	
MANA0016	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-05/09/79	4	20	
MANA0017	Yes	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	11	95	
MANA0019	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/08/75-06/10/76	1	2	
MANA0020	Yes	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/23/92-11/13/94	2	50	
MANA0021	Yes	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	11	94	
MANA0022	Yes	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	11	108	
MANA0024	Yes	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	11	93	
MANA0025	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/08/75-06/10/76	1	2	
MANA0027	Yes	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-03/28/85	2	40	
MANA0028	Yes	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	11	95	
MANA0030	Yes	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	11	109	
MANA0032	Yes	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/23/92-11/13/94	2	52	
MANA0033	Yes	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/23/92-11/13/94	2	52	
MANA0034	Yes	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/23/92-11/13/94	2	51	
MANA0035	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/06/73-06/29/78	5	636	A
MANA0036	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/03/73-12/03/73	0	1	
MANA0037	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	09/25/90-07/15/96	5	23	
MANA0038	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	09/25/90-07/15/96	5	22	
MANA0041	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/29/75-04/29/75	0	1	
MANA0042	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	05/31/79-02/11/81	1	36	
MANA0043	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	05/31/79-05/05/80	0	34	
MANA0045	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	05/25/79-06/16/80	1	57	
MANA0046	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	09/05/79-06/16/80	0	13	
MANA0047	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	05/25/79-03/09/81	1	88	
MANA0048	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	05/23/79-05/18/81	1	177	
MANA0050	No	00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/29/75-08/02/94	19	2	
MANA0001	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	18	183	T,A,S
MANA0003	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/31/75-06/26/79	4	36	
MANA0006	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-05/09/79	4	39	
MANA0007	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	21	69	T,S
MANA0012	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	5	191	A
MANA0015	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	07/08/76-04/18/83	6	3	
MANA0016	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-05/09/79	4	20	
MANA0019	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	01/08/75-06/10/76	1	2	
MANA0025	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	01/08/75-06/10/76	1	2	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot



**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0035	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	5	197	A
MANA0037	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	09/25/90-07/15/96	5	23	
MANA0038	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	09/25/90-07/15/96	5	22	
MANA0041	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/29/75-04/29/75	0	1	
MANA0050	No	00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/29/75-08/02/94	19	2	
MANA0001	No	00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	18	184	T,A,S
MANA0003	No	00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	03/31/75-06/26/79	4	36	
MANA0006	No	00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	01/08/75-05/09/79	4	40	
MANA0007	No	00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	21	68	T,S
MANA0015	No	00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	07/08/76-04/18/83	6	3	
MANA0016	No	00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-05/09/79	4	20	
MANA0019	No	00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	01/08/75-06/10/76	1	2	
MANA0025	No	00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	01/08/75-06/10/76	1	2	
MANA0037	No	00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	09/25/90-07/15/96	5	23	
MANA0038	No	00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	09/25/90-07/15/96	5	22	
MANA0041	No	00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/29/75-04/29/75	0	1	
MANA0050	No	00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/29/75-08/02/94	19	2	
MANA0012	No	00600	NITROGEN, TOTAL (MG/L AS N)	01/03/76-06/21/78	2	184	
MANA0035	No	00600	NITROGEN, TOTAL (MG/L AS N)	01/03/76-06/29/78	2	317	
MANA0012	No	00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-06/21/78	5	202	
MANA0013	No	00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-08/27/73	0	18	
MANA0035	No	00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-06/29/78	5	335	
MANA0036	No	00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-08/27/73	0	18	
MANA0012	No	00607	NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)	01/14/76-06/21/78	2	176	
MANA0013	No	00607	NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)	12/02/74-12/09/74	0	2	
MANA0035	No	00607	NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)	01/27/76-06/29/78	2	296	
MANA0036	No	00607	NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)	12/02/74-12/09/74	0	2	
MANA0005	No	00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	06/17/74-08/27/74	0	11	
MANA0012	No	00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	01/01/73-06/21/78	5	394	A
MANA0013	No	00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	1	70	
MANA0035	No	00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	09/04/73-06/29/78	4	732	A
MANA0036	No	00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	09/04/73-08/24/94	20	68	T
MANA0001	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	18	183	T,A,S
MANA0003	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-06/26/79	4	41	
MANA0006	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	08/05/71-05/09/79	7	62	
MANA0007	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	21	75	T,S
MANA0008	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/21/73-03/22/73	0	2	
MANA0010	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/21/73-03/22/73	0	2	
MANA0011	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/21/73-03/22/73	0	2	
MANA0012	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/13/73-08/27/73	0	18	
MANA0013	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/13/73-08/27/73	0	19	
MANA0014	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/22/73-05/23/73	0	3	
MANA0015	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	07/08/76-04/18/83	6	3	
MANA0016	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	11/19/74-05/09/79	4	21	
MANA0019	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	01/08/75-06/10/76	1	2	
MANA0025	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	01/08/75-06/10/76	1	2	
MANA0035	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/13/73-08/27/73	0	19	
MANA0036	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/13/73-08/27/73	0	18	
MANA0037	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/19/76-07/15/96	20	39	S
MANA0038	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/19/76-07/15/96	20	41	S
MANA0041	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/29/75-08/02/94	19	2	
MANA0042	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	05/31/79-02/11/81	1	36	
MANA0043	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	05/31/79-05/05/80	0	34	
MANA0045	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	05/25/79-06/16/80	1	57	
MANA0046	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	09/05/79-06/16/80	0	13	
MANA0047	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	05/25/79-03/09/81	1	88	
MANA0048	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	05/23/79-05/18/81	1	189	
MANA0050	No	00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/29/75-08/02/94	19	2	
MANA0002	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/30/77-08/30/77	0	1	
MANA0004	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/30/79-08/30/79	0	1	
MANA0005	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	06/17/74-08/30/79	5	13	
MANA0009	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/30/77-08/30/77	0	1	
MANA0012	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	1	68	
MANA0013	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	1	71	
MANA0018	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	06/24/80-06/24/80	0	1	
MANA0026	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	0	1	
MANA0029	Yes	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	03/25/75-03/25/75	0	1	
MANA0035	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	1	71	
MANA0036	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-08/24/94	20	70	T
MANA0039	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	0	1	
MANA0040	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	0	1	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation**  
**From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0049	No	00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	0	1	
MANA0001	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	18	183	T,A,S
MANA0003	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-06/26/79	4	41	
MANA0006	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	08/05/71-05/09/79	7	62	
MANA0007	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	21	75	T,S
MANA0012	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	0	28	
MANA0013	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	0	28	
MANA0015	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	07/08/76-04/18/83	6	3	
MANA0016	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	11/19/74-05/09/79	4	23	
MANA0019	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	01/08/75-06/10/76	1	2	
MANA0025	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	01/08/75-06/10/76	1	2	
MANA0035	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	0	28	
MANA0036	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	0	28	
MANA0037	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/19/76-07/15/96	20	39	S
MANA0038	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/19/76-07/15/96	20	41	S
MANA0041	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/29/75-08/02/94	19	2	
MANA0050	No	00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/29/75-08/02/94	19	2	
MANA0002	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/30/77-08/30/77	0	1	
MANA0004	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/30/79-08/30/79	0	1	
MANA0005	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	06/17/74-08/30/79	5	13	
MANA0009	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/30/77-08/30/77	0	1	
MANA0012	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	1	67	
MANA0013	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	1	71	
MANA0018	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	06/24/80-06/24/80	0	1	
MANA0026	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	0	1	
MANA0029	Yes	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	03/25/75-03/25/75	0	1	
MANA0035	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	1	71	
MANA0036	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-08/29/79	5	68	
MANA0039	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	0	1	
MANA0040	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	0	1	
MANA0049	No	00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	0	1	
MANA0001	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	17	170	T,A,S
MANA0003	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	10/07/74-09/28/76	1	13	
MANA0006	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	08/05/71-07/28/76	4	40	
MANA0007	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	21	46	S
MANA0008	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	02/21/73-03/22/73	0	2	
MANA0010	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	02/21/73-03/22/73	0	2	
MANA0011	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	02/21/73-03/22/73	0	2	
MANA0012	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	0	28	
MANA0013	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	0	28	
MANA0014	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	02/22/73-05/23/73	0	3	
MANA0015	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/08/76-04/18/83	6	3	
MANA0016	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	11/19/74-09/28/76	1	11	
MANA0019	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	01/08/75-06/10/76	1	2	
MANA0025	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	01/08/75-06/10/76	1	2	
MANA0035	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	0	28	
MANA0036	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	0	28	
MANA0037	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	09/25/90-07/15/96	5	24	
MANA0038	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	09/25/90-07/15/96	5	23	
MANA0041	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	04/29/75-08/02/94	19	2	
MANA0050	No	00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	04/29/75-08/02/94	19	2	
MANA0012	No	00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	01/14/76-06/21/78	2	177	
MANA0013	No	00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	12/02/74-12/09/74	0	2	
MANA0035	No	00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	01/27/76-06/29/78	2	296	
MANA0036	No	00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	12/02/74-08/24/94	19	3	
MANA0042	No	00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	05/31/79-05/05/80	0	33	
MANA0043	No	00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	05/31/79-05/05/80	0	33	
MANA0045	No	00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	05/25/79-06/16/80	1	57	
MANA0046	No	00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	09/05/79-06/16/80	0	11	
MANA0047	No	00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	05/31/79-03/09/81	1	83	
MANA0048	No	00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	05/23/79-05/18/81	1	171	
MANA0001	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	18	181	T,A,S
MANA0003	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-06/26/79	4	40	
MANA0005	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/17/74-08/27/74	0	8	
MANA0006	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	08/05/71-05/09/79	7	62	
MANA0007	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	21	74	T,S
MANA0008	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	02/21/73-03/22/73	0	2	
MANA0010	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	02/21/73-03/22/73	0	2	
MANA0011	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	02/21/73-03/22/73	0	2	
MANA0012	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	01/01/73-06/21/78	5	442	A
MANA0013	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/04/73-12/30/74	1	82	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

# Station/Parameter Period of Record Tabulation From 11/19/52 To 07/17/96

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0014	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	02/22/73-03/22/73	0	2	
MANA0015	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	07/08/76-04/18/83	6	3	
MANA0016	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	11/19/74-05/09/79	4	21	
MANA0019	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	01/08/75-06/10/76	1	2	
MANA0025	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	01/08/75-06/10/76	1	2	
MANA0035	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/04/73-06/29/78	5	806	A
MANA0036	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/06/73-12/30/74	1	80	
MANA0037	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/19/76-07/15/96	20	39	S
MANA0038	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/19/76-07/15/96	20	41	S
MANA0041	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/29/75-08/02/94	19	2	
MANA0042	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	05/31/79-05/05/80	0	33	
MANA0043	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	05/31/79-05/05/80	0	33	
MANA0045	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	05/25/79-06/16/80	1	57	
MANA0046	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	09/05/79-06/16/80	0	11	
MANA0047	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	05/25/79-03/09/81	1	83	
MANA0048	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	05/23/79-05/18/81	1	174	
MANA0050	No	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/29/75-08/02/94	19	2	
MANA0001	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	04/18/78-06/26/79	1	14	
MANA0003	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	10/20/76-06/26/79	2	28	
MANA0006	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	10/20/76-05/09/79	2	22	
MANA0007	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	10/20/76-06/26/79	2	28	
MANA0016	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	11/22/76-05/09/79	2	11	
MANA0017	Yes	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	1	5	
MANA0020	Yes	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	1	5	
MANA0021	Yes	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	1	5	
MANA0022	Yes	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	1	5	
MANA0024	Yes	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	1	5	
MANA0028	Yes	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	1	5	
MANA0030	Yes	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	1	5	
MANA0032	Yes	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	1	5	
MANA0033	Yes	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	1	5	
MANA0034	Yes	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	1	5	
MANA0037	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	04/19/76-06/26/79	3	15	
MANA0038	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	04/19/76-06/26/79	3	18	
MANA0042	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	05/31/79-02/11/81	1	36	
MANA0043	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	05/31/79-05/05/80	0	34	
MANA0045	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	05/25/79-06/16/80	1	57	
MANA0046	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	09/05/79-06/16/80	0	13	
MANA0047	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	05/25/79-03/09/81	1	87	
MANA0048	No	00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	05/23/79-05/18/81	1	188	
MANA0002	No	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/30/77-08/30/77	0	1	
MANA0004	No	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/30/79-08/30/79	0	1	
MANA0005	No	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/30/79-08/30/79	0	1	
MANA0009	No	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/30/77-08/30/77	0	1	
MANA0012	No	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	01/07/75-06/21/78	3	361	
MANA0018	No	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	06/24/80-06/24/80	0	1	
MANA0026	No	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/28/79-08/28/79	0	1	
MANA0029	Yes	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	03/25/75-03/25/75	0	1	
MANA0035	No	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	01/14/75-06/29/78	3	719	
MANA0036	No	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/29/79-08/24/94	14	2	
MANA0039	No	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/28/79-08/28/79	0	1	
MANA0040	No	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/28/79-08/28/79	0	1	
MANA0049	No	00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/28/79-08/28/79	0	1	
MANA0005	No	00650	PHOSPHATE, TOTAL (MG/L AS PO4)	03/06/68-04/07/69	1	2	
MANA0008	No	00650	PHOSPHATE, TOTAL (MG/L AS PO4)	02/21/73-03/22/73	0	2	
MANA0010	No	00650	PHOSPHATE, TOTAL (MG/L AS PO4)	02/21/73-03/22/73	0	2	
MANA0011	No	00650	PHOSPHATE, TOTAL (MG/L AS PO4)	02/21/73-03/22/73	0	2	
MANA0014	No	00650	PHOSPHATE, TOTAL (MG/L AS PO4)	02/22/73-03/22/73	0	2	
MANA0026	No	00650	PHOSPHATE, TOTAL (MG/L AS PO4)	05/15/69-05/15/69	0	1	
MANA0031	No	00650	PHOSPHATE, TOTAL (MG/L AS PO4)	03/14/68-05/15/69	1	7	
MANA0002	No	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	08/30/77-08/30/77	0	1	
MANA0004	No	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	08/30/79-08/30/79	0	1	
MANA0005	No	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	06/17/74-08/30/79	5	13	
MANA0009	No	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	08/30/77-08/30/77	0	1	
MANA0013	No	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	02/20/73-12/30/74	1	97	
MANA0018	No	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	06/24/80-06/24/80	0	1	
MANA0026	No	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	08/28/79-08/28/79	0	1	
MANA0029	Yes	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	03/25/75-03/25/75	0	1	
MANA0036	No	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	02/20/73-08/29/79	6	95	
MANA0039	No	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	08/28/79-08/28/79	0	1	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0040	No	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	08/28/79-08/28/79	0	1	
MANA0049	No	00660	PHOSPHATE, ORTHO (MG/L AS PO4)	08/28/79-08/28/79	0	1	
MANA0001	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	17	169	T,A,S
MANA0005	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	06/17/74-08/27/74	0	12	
MANA0006	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	01/08/75-06/10/76	1	2	
MANA0007	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	09/25/90-07/15/96	5	24	
MANA0012	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	01/01/73-06/21/78	5	455	A
MANA0013	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	03/06/73-12/30/74	1	94	
MANA0015	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	07/08/76-04/18/83	6	3	
MANA0017	Yes	00665	PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	0	2	
MANA0019	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	01/08/75-06/10/76	1	2	
MANA0020	Yes	00665	PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	0	2	
MANA0021	Yes	00665	PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	0	2	
MANA0022	Yes	00665	PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	0	2	
MANA0024	Yes	00665	PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	0	2	
MANA0025	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	01/08/75-06/10/76	1	2	
MANA0028	Yes	00665	PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	0	2	
MANA0030	Yes	00665	PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	0	2	
MANA0032	Yes	00665	PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	0	2	
MANA0033	Yes	00665	PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	0	2	
MANA0034	Yes	00665	PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	0	2	
MANA0035	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	03/06/73-06/29/78	5	820	A
MANA0036	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	03/06/73-12/30/74	1	91	
MANA0037	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	09/25/90-07/15/96	5	24	
MANA0038	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	09/25/90-07/15/96	5	23	
MANA0041	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	04/29/75-08/02/94	19	2	
MANA0042	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	05/31/79-02/11/81	1	32	
MANA0043	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	05/31/79-05/05/80	0	30	
MANA0045	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	05/25/79-06/16/80	1	56	
MANA0046	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	09/05/79-06/16/80	0	10	
MANA0047	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	05/25/79-03/09/81	1	82	
MANA0048	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	05/23/79-05/18/81	1	175	
MANA0050	No	00665	PHOSPHORUS, TOTAL (MG/L AS P)	04/29/75-08/02/94	19	2	
MANA0008	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	05/18/73-11/21/73	0	3	
MANA0010	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	05/18/73-11/21/73	0	3	
MANA0011	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	05/18/73-11/21/73	0	3	
MANA0012	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	01/14/76-06/21/78	2	179	
MANA0014	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	05/23/73-06/29/73	0	2	
MANA0035	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	01/14/76-06/29/78	2	301	
MANA0036	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	08/24/94-08/24/94	0	1	
MANA0042	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	05/31/79-02/11/81	1	32	
MANA0043	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	05/31/79-05/05/80	0	30	
MANA0045	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	05/25/79-06/16/80	1	56	
MANA0046	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	09/05/79-06/16/80	0	11	
MANA0047	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	05/25/79-03/09/81	1	83	
MANA0048	No	00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	05/23/79-05/18/81	1	174	
MANA0001	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	12	133	T,A
MANA0002	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/30/77-08/30/77	0	1	
MANA0004	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/30/79-08/30/79	0	1	
MANA0005	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/17/74-08/30/79	5	13	
MANA0006	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/08/75-06/10/76	1	2	
MANA0007	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	09/25/90-04/07/92	1	7	
MANA0009	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/30/77-08/30/77	0	1	
MANA0012	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/01/73-06/21/78	5	425	A
MANA0013	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-12/30/74	1	97	
MANA0015	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/08/76-04/18/83	6	3	
MANA0017	Yes	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	0	3	
MANA0018	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/30/79-08/30/79	0	1	
MANA0019	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/08/75-06/10/76	1	2	
MANA0020	Yes	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	0	3	
MANA0021	Yes	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	0	3	
MANA0022	Yes	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	0	3	
MANA0023	Yes	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/24/80-06/24/80	0	1	
MANA0024	Yes	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	0	3	
MANA0025	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/08/75-06/10/76	1	2	
MANA0026	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/28/79-08/28/79	0	1	
MANA0028	Yes	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	0	3	
MANA0029	Yes	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	03/25/75-03/25/75	0	1	
MANA0030	Yes	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	0	3	
MANA0032	Yes	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	0	3	
MANA0033	Yes	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	0	3	
MANA0034	Yes	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	0	3	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

# Station/Parameter Period of Record Tabulation From 11/19/52 To 07/17/96

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0035	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-06/29/78	5	757	A
MANA0036	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-08/24/94	21	96	
MANA0037	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	09/25/90-04/07/92	1	7	
MANA0038	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	09/25/90-04/07/92	1	6	
MANA0039	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/28/79-08/28/79	0	1	
MANA0040	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/28/79-08/28/79	0	1	
MANA0041	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	04/29/75-04/29/75	0	1	
MANA0042	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	05/31/79-02/11/81	1	36	
MANA0043	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	05/31/79-05/05/80	0	34	
MANA0045	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	05/25/79-06/16/80	1	57	
MANA0046	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	09/05/79-06/16/80	0	13	
MANA0047	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	05/25/79-03/09/81	1	88	
MANA0048	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	05/23/79-05/18/81	1	189	
MANA0049	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/28/79-08/28/79	0	1	
MANA0050	No	00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	04/29/75-04/29/75	0	1	
MANA0013	No	00673	PHOSPHORUS, DISSOLVED ORGANIC (MG/L AS P)	12/02/74-12/09/74	0	2	
MANA0036	No	00673	PHOSPHORUS, DISSOLVED ORGANIC (MG/L AS P)	12/02/74-12/09/74	0	2	
MANA0001	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	17	172	T,A,S
MANA0003	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	03/31/75-06/26/79	4	38	
MANA0005	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	06/17/74-08/27/74	0	12	
MANA0006	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	01/08/75-05/09/79	4	39	
MANA0007	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	21	72	T,S
MANA0012	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	5	210	A
MANA0013	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-12/30/74	1	100	
MANA0015	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	07/08/76-04/18/83	6	3	
MANA0016	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	03/14/75-05/09/79	4	19	
MANA0019	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	01/08/75-06/10/76	1	2	
MANA0025	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	01/08/75-06/10/76	1	2	
MANA0035	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	5	234	A
MANA0036	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-12/30/74	1	95	
MANA0037	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	09/25/90-07/15/96	5	23	
MANA0038	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	09/25/90-07/15/96	5	22	
MANA0041	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	04/29/75-08/02/94	19	2	
MANA0048	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	01/07/80-07/07/80	0	19	
MANA0050	No	00680	CARBON, TOTAL ORGANIC (MG/L AS C)	04/29/75-08/02/94	19	2	
MANA0012	No	00681	CARBON, DISSOLVED ORGANIC (MG/L AS C)	03/31/76-06/21/78	2	51	
MANA0035	No	00681	CARBON, DISSOLVED ORGANIC (MG/L AS C)	03/31/76-06/21/78	2	57	
MANA0048	No	00681	CARBON, DISSOLVED ORGANIC (MG/L AS C)	01/07/80-11/10/80	0	23	
MANA0012	No	00691	CARBON, DISSOLVED INORGANIC (MG/L AS C)	06/06/73-06/20/73	0	3	
MANA0013	No	00691	CARBON, DISSOLVED INORGANIC (MG/L AS C)	06/04/73-06/20/73	0	3	
MANA0035	No	00691	CARBON, DISSOLVED INORGANIC (MG/L AS C)	06/04/73-06/20/73	0	3	
MANA0036	No	00691	CARBON, DISSOLVED INORGANIC (MG/L AS C)	06/06/73-06/20/73	0	3	
MANA0001	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	8	91	A
MANA0002	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	08/30/77-08/30/77	0	1	
MANA0004	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	08/30/79-08/30/79	0	1	
MANA0005	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	11/19/52-08/30/79	26	4	
MANA0007	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	05/01/75-07/15/96	21	24	
MANA0009	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	08/30/77-08/30/77	0	1	
MANA0018	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	06/24/80-06/24/80	0	1	
MANA0026	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	03/25/75-03/25/75	0	1	
MANA0031	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	03/14/68-05/15/69	1	7	
MANA0036	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	08/29/79-08/29/79	0	1	
MANA0037	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	09/25/90-07/15/96	5	23	
MANA0038	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	09/25/90-07/15/96	5	22	
MANA0039	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	08/28/79-08/28/79	0	1	
MANA0040	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	08/28/79-08/28/79	0	1	
MANA0041	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	08/02/94-08/02/94	0	1	
MANA0049	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	08/28/79-08/28/79	0	1	
MANA0050	No	00900	HARDNESS, TOTAL (MG/L AS CaCO3)	08/02/94-08/02/94	0	1	
MANA0002	No	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/30/77-08/30/77	0	1	
MANA0004	No	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/30/79-08/30/79	0	1	
MANA0005	No	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	11/19/52-08/30/79	26	4	
MANA0009	No	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/30/77-08/30/77	0	1	
MANA0018	No	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	06/24/80-06/24/80	0	1	
MANA0026	No	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	03/25/75-03/25/75	0	1	
MANA0031	No	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	03/14/68-05/15/69	1	7	
MANA0036	No	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/29/79-08/29/79	0	1	
MANA0039	No	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/28/79-08/28/79	0	1	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0040	No	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/28/79-08/28/79	0	1	
MANA0049	No	00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/28/79-08/28/79	0	1	
MANA0002	No	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	08/30/77-08/30/77	0	1	
MANA0004	No	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	08/30/79-08/30/79	0	1	
MANA0005	No	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	11/19/52-08/30/79	26	4	
MANA0009	No	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	08/30/77-08/30/77	0	1	
MANA0018	No	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	06/24/80-06/24/80	0	1	
MANA0026	No	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	03/25/75-03/25/75	0	1	
MANA0031	No	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	03/14/68-05/15/69	1	7	
MANA0036	No	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	08/29/79-08/24/94	14	2	
MANA0039	No	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	08/28/79-08/28/79	0	1	
MANA0040	No	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	08/28/79-08/28/79	0	1	
MANA0049	No	00915	CALCIUM, DISSOLVED (MG/L AS Ca)	08/28/79-08/28/79	0	1	
MANA0002	No	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	08/30/77-08/30/77	0	1	
MANA0004	No	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	08/30/79-08/30/79	0	1	
MANA0005	No	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	11/19/52-08/30/79	26	4	
MANA0009	No	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	08/30/77-08/30/77	0	1	
MANA0018	No	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	06/24/80-06/24/80	0	1	
MANA0026	No	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	03/25/75-03/25/75	0	1	
MANA0031	No	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	03/14/68-05/15/69	1	7	
MANA0036	No	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	08/29/79-08/24/94	14	2	
MANA0039	No	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	08/28/79-08/28/79	0	1	
MANA0040	No	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	08/28/79-08/28/79	0	1	
MANA0049	No	00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	08/28/79-08/28/79	0	1	
MANA0002	No	00930	SODIUM, DISSOLVED (MG/L AS Na)	08/30/77-08/30/77	0	1	
MANA0004	No	00930	SODIUM, DISSOLVED (MG/L AS Na)	08/30/79-08/30/79	0	1	
MANA0005	No	00930	SODIUM, DISSOLVED (MG/L AS Na)	11/19/52-08/30/79	26	4	
MANA0009	No	00930	SODIUM, DISSOLVED (MG/L AS Na)	08/30/77-08/30/77	0	1	
MANA0018	No	00930	SODIUM, DISSOLVED (MG/L AS Na)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00930	SODIUM, DISSOLVED (MG/L AS Na)	06/24/80-06/24/80	0	1	
MANA0026	No	00930	SODIUM, DISSOLVED (MG/L AS Na)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00930	SODIUM, DISSOLVED (MG/L AS Na)	03/25/75-03/25/75	0	1	
MANA0031	No	00930	SODIUM, DISSOLVED (MG/L AS Na)	03/14/68-05/15/69	1	7	
MANA0036	No	00930	SODIUM, DISSOLVED (MG/L AS Na)	08/29/79-08/24/94	14	2	
MANA0039	No	00930	SODIUM, DISSOLVED (MG/L AS Na)	08/28/79-08/28/79	0	1	
MANA0040	No	00930	SODIUM, DISSOLVED (MG/L AS Na)	08/28/79-08/28/79	0	1	
MANA0049	No	00930	SODIUM, DISSOLVED (MG/L AS Na)	08/28/79-08/28/79	0	1	
MANA0002	No	00931	SODIUM ADSORPTION RATIO	08/30/77-08/30/77	0	1	
MANA0004	No	00931	SODIUM ADSORPTION RATIO	08/30/79-08/30/79	0	1	
MANA0005	No	00931	SODIUM ADSORPTION RATIO	03/06/68-08/30/79	11	3	
MANA0009	No	00931	SODIUM ADSORPTION RATIO	08/30/77-08/30/77	0	1	
MANA0018	No	00931	SODIUM ADSORPTION RATIO	08/30/79-08/30/79	0	1	
MANA0023	Yes	00931	SODIUM ADSORPTION RATIO	06/24/80-06/24/80	0	1	
MANA0026	No	00931	SODIUM ADSORPTION RATIO	05/15/69-08/28/79	10	2	
MANA0029	Yes	00931	SODIUM ADSORPTION RATIO	03/25/75-03/25/75	0	1	
MANA0031	No	00931	SODIUM ADSORPTION RATIO	03/14/68-05/15/69	1	7	
MANA0036	No	00931	SODIUM ADSORPTION RATIO	08/29/79-08/29/79	0	1	
MANA0039	No	00931	SODIUM ADSORPTION RATIO	08/28/79-08/28/79	0	1	
MANA0040	No	00931	SODIUM ADSORPTION RATIO	08/28/79-08/28/79	0	1	
MANA0049	No	00931	SODIUM ADSORPTION RATIO	08/28/79-08/28/79	0	1	
MANA0002	No	00932	SODIUM, PERCENT	08/30/77-08/30/77	0	1	
MANA0004	No	00932	SODIUM, PERCENT	08/30/79-08/30/79	0	1	
MANA0005	No	00932	SODIUM, PERCENT	03/06/68-08/30/79	11	3	
MANA0009	No	00932	SODIUM, PERCENT	08/30/77-08/30/77	0	1	
MANA0018	No	00932	SODIUM, PERCENT	08/30/79-08/30/79	0	1	
MANA0023	Yes	00932	SODIUM, PERCENT	06/24/80-06/24/80	0	1	
MANA0026	No	00932	SODIUM, PERCENT	05/15/69-08/28/79	10	2	
MANA0029	Yes	00932	SODIUM, PERCENT	03/25/75-03/25/75	0	1	
MANA0031	No	00932	SODIUM, PERCENT	03/14/68-05/15/69	1	7	
MANA0036	No	00932	SODIUM, PERCENT	08/29/79-08/29/79	0	1	
MANA0039	No	00932	SODIUM, PERCENT	08/28/79-08/28/79	0	1	
MANA0040	No	00932	SODIUM, PERCENT	08/28/79-08/28/79	0	1	
MANA0049	No	00932	SODIUM, PERCENT	08/28/79-08/28/79	0	1	
MANA0004	No	00933	SODIUM,PLUS POTASSIUM (MG/L)	08/30/79-08/30/79	0	1	
MANA0005	No	00933	SODIUM,PLUS POTASSIUM (MG/L)	08/30/79-08/30/79	0	1	
MANA0018	No	00933	SODIUM,PLUS POTASSIUM (MG/L)	08/30/79-08/30/79	0	1	
MANA0026	No	00933	SODIUM,PLUS POTASSIUM (MG/L)	08/28/79-08/28/79	0	1	
MANA0036	No	00933	SODIUM,PLUS POTASSIUM (MG/L)	08/29/79-08/29/79	0	1	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0039	No	00933	SODIUM,PLUS POTASSIUM (MG/L)	08/28/79-08/28/79	0	1	
MANA0040	No	00933	SODIUM,PLUS POTASSIUM (MG/L)	08/28/79-08/28/79	0	1	
MANA0049	No	00933	SODIUM,PLUS POTASSIUM (MG/L)	08/28/79-08/28/79	0	1	
MANA0002	No	00935	POTASSIUM, DISSOLVED (MG/L AS K)	08/30/77-08/30/77	0	1	
MANA0004	No	00935	POTASSIUM, DISSOLVED (MG/L AS K)	08/30/79-08/30/79	0	1	
MANA0005	No	00935	POTASSIUM, DISSOLVED (MG/L AS K)	11/19/52-08/30/79	26	4	
MANA0006	No	00935	POTASSIUM, DISSOLVED (MG/L AS K)	03/27/79-03/27/79	0	1	
MANA0009	No	00935	POTASSIUM, DISSOLVED (MG/L AS K)	08/30/77-08/30/77	0	1	
MANA0018	No	00935	POTASSIUM, DISSOLVED (MG/L AS K)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00935	POTASSIUM, DISSOLVED (MG/L AS K)	06/24/80-06/24/80	0	1	
MANA0026	No	00935	POTASSIUM, DISSOLVED (MG/L AS K)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00935	POTASSIUM, DISSOLVED (MG/L AS K)	03/25/75-03/25/75	0	1	
MANA0031	No	00935	POTASSIUM, DISSOLVED (MG/L AS K)	03/14/68-05/15/69	1	7	
MANA0036	No	00935	POTASSIUM, DISSOLVED (MG/L AS K)	08/29/79-08/24/94	14	2	
MANA0039	No	00935	POTASSIUM, DISSOLVED (MG/L AS K)	08/28/79-08/28/79	0	1	
MANA0040	No	00935	POTASSIUM, DISSOLVED (MG/L AS K)	08/28/79-08/28/79	0	1	
MANA0049	No	00935	POTASSIUM, DISSOLVED (MG/L AS K)	08/28/79-08/28/79	0	1	
MANA0001	No	00940	CHLORIDE,TOTAL IN WATER MG/L	06/14/82-06/05/96	13	73	T
MANA0002	No	00940	CHLORIDE,TOTAL IN WATER MG/L	08/30/77-08/30/77	0	1	
MANA0003	No	00940	CHLORIDE,TOTAL IN WATER MG/L	03/15/77-03/15/77	0	1	
MANA0004	No	00940	CHLORIDE,TOTAL IN WATER MG/L	08/30/79-08/30/79	0	1	
MANA0005	No	00940	CHLORIDE,TOTAL IN WATER MG/L	11/19/52-08/30/79	26	4	
MANA0006	No	00940	CHLORIDE,TOTAL IN WATER MG/L	01/08/75-06/10/76	1	2	
MANA0007	No	00940	CHLORIDE,TOTAL IN WATER MG/L	05/01/75-07/15/96	21	24	
MANA0009	No	00940	CHLORIDE,TOTAL IN WATER MG/L	08/30/77-08/30/77	0	1	
MANA0018	No	00940	CHLORIDE,TOTAL IN WATER MG/L	08/30/79-08/30/79	0	1	
MANA0019	No	00940	CHLORIDE,TOTAL IN WATER MG/L	01/08/75-06/10/76	1	2	
MANA0023	Yes	00940	CHLORIDE,TOTAL IN WATER MG/L	06/24/80-06/24/80	0	1	
MANA0025	No	00940	CHLORIDE,TOTAL IN WATER MG/L	01/08/75-06/10/76	1	2	
MANA0026	No	00940	CHLORIDE,TOTAL IN WATER MG/L	05/15/69-08/28/79	10	2	
MANA0029	Yes	00940	CHLORIDE,TOTAL IN WATER MG/L	03/25/75-03/25/75	0	1	
MANA0031	No	00940	CHLORIDE,TOTAL IN WATER MG/L	03/14/68-05/15/69	1	7	
MANA0036	No	00940	CHLORIDE,TOTAL IN WATER MG/L	08/29/79-08/24/94	14	2	
MANA0037	No	00940	CHLORIDE,TOTAL IN WATER MG/L	09/25/90-07/15/96	5	23	
MANA0038	No	00940	CHLORIDE,TOTAL IN WATER MG/L	09/25/90-07/15/96	5	22	
MANA0039	No	00940	CHLORIDE,TOTAL IN WATER MG/L	08/28/79-08/28/79	0	1	
MANA0040	No	00940	CHLORIDE,TOTAL IN WATER MG/L	08/28/79-08/28/79	0	1	
MANA0041	No	00940	CHLORIDE,TOTAL IN WATER MG/L	04/29/75-04/29/75	0	1	
MANA0049	No	00940	CHLORIDE,TOTAL IN WATER MG/L	08/28/79-08/28/79	0	1	
MANA0050	No	00940	CHLORIDE,TOTAL IN WATER MG/L	08/02/94-08/02/94	0	1	
MANA0001	No	00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	7	70	
MANA0002	No	00945	SULFATE, TOTAL (MG/L AS SO4)	08/30/77-08/30/77	0	1	
MANA0004	No	00945	SULFATE, TOTAL (MG/L AS SO4)	08/30/79-08/30/79	0	1	
MANA0005	No	00945	SULFATE, TOTAL (MG/L AS SO4)	11/19/52-08/30/79	26	4	
MANA0007	No	00945	SULFATE, TOTAL (MG/L AS SO4)	09/25/90-07/15/96	5	23	
MANA0009	No	00945	SULFATE, TOTAL (MG/L AS SO4)	08/30/77-08/30/77	0	1	
MANA0018	No	00945	SULFATE, TOTAL (MG/L AS SO4)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00945	SULFATE, TOTAL (MG/L AS SO4)	06/24/80-06/24/80	0	1	
MANA0026	No	00945	SULFATE, TOTAL (MG/L AS SO4)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00945	SULFATE, TOTAL (MG/L AS SO4)	03/25/75-03/25/75	0	1	
MANA0031	No	00945	SULFATE, TOTAL (MG/L AS SO4)	03/14/68-05/15/69	1	7	
MANA0036	No	00945	SULFATE, TOTAL (MG/L AS SO4)	08/29/79-08/24/94	14	2	
MANA0037	No	00945	SULFATE, TOTAL (MG/L AS SO4)	09/25/90-07/15/96	5	23	
MANA0038	No	00945	SULFATE, TOTAL (MG/L AS SO4)	09/25/90-07/15/96	5	22	
MANA0039	No	00945	SULFATE, TOTAL (MG/L AS SO4)	08/28/79-08/28/79	0	1	
MANA0040	No	00945	SULFATE, TOTAL (MG/L AS SO4)	08/28/79-08/28/79	0	1	
MANA0049	No	00945	SULFATE, TOTAL (MG/L AS SO4)	08/28/79-08/28/79	0	1	
MANA0050	No	00945	SULFATE, TOTAL (MG/L AS SO4)	08/02/94-08/02/94	0	1	
MANA0002	No	00950	FLUORIDE, DISSOLVED (MG/L AS F)	08/30/77-08/30/77	0	1	
MANA0004	No	00950	FLUORIDE, DISSOLVED (MG/L AS F)	08/30/79-08/30/79	0	1	
MANA0005	No	00950	FLUORIDE, DISSOLVED (MG/L AS F)	11/19/52-08/30/79	26	4	
MANA0009	No	00950	FLUORIDE, DISSOLVED (MG/L AS F)	08/30/77-08/30/77	0	1	
MANA0018	No	00950	FLUORIDE, DISSOLVED (MG/L AS F)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00950	FLUORIDE, DISSOLVED (MG/L AS F)	06/24/80-06/24/80	0	1	
MANA0026	No	00950	FLUORIDE, DISSOLVED (MG/L AS F)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00950	FLUORIDE, DISSOLVED (MG/L AS F)	03/25/75-03/25/75	0	1	
MANA0031	No	00950	FLUORIDE, DISSOLVED (MG/L AS F)	03/14/68-05/15/69	1	7	
MANA0036	No	00950	FLUORIDE, DISSOLVED (MG/L AS F)	08/29/79-08/24/94	14	2	
MANA0039	No	00950	FLUORIDE, DISSOLVED (MG/L AS F)	08/28/79-08/28/79	0	1	
MANA0040	No	00950	FLUORIDE, DISSOLVED (MG/L AS F)	08/28/79-08/28/79	0	1	
MANA0049	No	00950	FLUORIDE, DISSOLVED (MG/L AS F)	08/28/79-08/28/79	0	1	
MANA0001	No	00951	FLUORIDE, TOTAL (MG/L AS F)	11/15/88-04/15/93	4	43	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0007	No	00951	FLUORIDE, TOTAL (MG/L AS F)	09/25/90-01/06/93	2	10	
MANA0037	No	00951	FLUORIDE, TOTAL (MG/L AS F)	09/25/90-01/06/93	2	10	
MANA0038	No	00951	FLUORIDE, TOTAL (MG/L AS F)	09/25/90-01/06/93	2	9	
MANA0001	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	05/09/89-01/14/93	3	42	
MANA0002	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	08/30/77-08/30/77	0	1	
MANA0004	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	08/30/79-08/30/79	0	1	
MANA0005	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	11/19/52-08/30/79	26	4	
MANA0007	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	09/25/90-01/06/93	2	10	
MANA0009	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	08/30/77-08/30/77	0	1	
MANA0018	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	08/30/79-08/30/79	0	1	
MANA0023	Yes	00955	SILICA, DISSOLVED (MG/L AS SI02)	06/24/80-06/24/80	0	1	
MANA0026	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	05/15/69-08/28/79	10	2	
MANA0029	Yes	00955	SILICA, DISSOLVED (MG/L AS SI02)	03/25/75-03/25/75	0	1	
MANA0031	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	03/14/68-05/15/69	1	7	
MANA0036	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	08/29/79-08/24/94	14	2	
MANA0037	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	09/25/90-01/06/93	2	10	
MANA0038	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	09/25/90-01/06/93	2	9	
MANA0039	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	08/28/79-08/28/79	0	1	
MANA0040	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	08/28/79-08/28/79	0	1	
MANA0049	No	00955	SILICA, DISSOLVED (MG/L AS SI02)	08/28/79-08/28/79	0	1	
MANA0005	No	01000	ARSENIC, DISSOLVED (UG/L AS AS)	08/30/79-08/30/79	0	1	
MANA0029	Yes	01000	ARSENIC, DISSOLVED (UG/L AS AS)	03/25/75-03/25/75	0	1	
MANA0049	No	01000	ARSENIC, DISSOLVED (UG/L AS AS)	08/28/79-08/28/79	0	1	
MANA0001	No	01002	ARSENIC, TOTAL (UG/L AS AS)	04/18/78-07/28/94	16	14	
MANA0003	No	01002	ARSENIC, TOTAL (UG/L AS AS)	09/30/75-04/19/79	3	6	
MANA0006	No	01002	ARSENIC, TOTAL (UG/L AS AS)	08/05/71-03/27/79	7	9	
MANA0007	No	01002	ARSENIC, TOTAL (UG/L AS AS)	09/30/75-08/24/94	18	9	
MANA0015	No	01002	ARSENIC, TOTAL (UG/L AS AS)	04/18/83-04/18/83	0	1	
MANA0016	No	01002	ARSENIC, TOTAL (UG/L AS AS)	03/15/77-03/15/77	0	1	
MANA0037	No	01002	ARSENIC, TOTAL (UG/L AS AS)	04/28/77-08/24/94	17	8	
MANA0038	No	01002	ARSENIC, TOTAL (UG/L AS AS)	04/28/77-08/24/94	17	7	
MANA0041	No	01002	ARSENIC, TOTAL (UG/L AS AS)	08/02/94-08/02/94	0	1	
MANA0050	No	01002	ARSENIC, TOTAL (UG/L AS AS)	08/02/94-08/02/94	0	1	
MANA0001	No	01003	ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	06/02/80-06/16/95	15	10	
MANA0007	No	01003	ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	10/16/91-10/16/91	0	1	
MANA0037	No	01003	ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	10/16/91-04/17/95	3	2	
MANA0038	No	01003	ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	07/17/91-04/17/95	3	3	
MANA0041	No	01003	ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	08/02/94-08/02/94	0	1	
MANA0050	No	01003	ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	08/02/94-08/02/94	0	1	
MANA0001	No	01004	ARSENIC TOTAL IN FISH OR ANIMAL WET WT MG/KG	06/30/87-07/12/90	3	6	
MANA0009	No	01008	BARIUM IN BOTTOM DEPOSITS (MG/KG AS BA DRY WGT)	08/30/77-08/30/77	0	1	
MANA0001	No	01012	BERYLLIUM, TOTAL (UG/L AS BE)	09/15/88-04/15/93	4	3	
MANA0007	No	01012	BERYLLIUM, TOTAL (UG/L AS BE)	07/17/91-04/29/93	1	2	
MANA0037	No	01012	BERYLLIUM, TOTAL (UG/L AS BE)	07/17/91-04/29/93	1	2	
MANA0038	No	01012	BERYLLIUM, TOTAL (UG/L AS BE)	04/29/93-04/29/93	0	1	
MANA0041	No	01012	BERYLLIUM, TOTAL (UG/L AS BE)	08/02/94-08/02/94	0	1	
MANA0050	No	01012	BERYLLIUM, TOTAL (UG/L AS BE)	08/02/94-08/02/94	0	1	
MANA0001	No	01013	BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	05/04/83-06/16/95	12	6	
MANA0007	No	01013	BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	10/16/91-10/16/91	0	1	
MANA0037	No	01013	BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	10/16/91-04/17/95	3	2	
MANA0038	No	01013	BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	07/17/91-04/17/95	3	3	
MANA0041	No	01013	BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	08/02/94-08/02/94	0	1	
MANA0050	No	01013	BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	08/02/94-08/02/94	0	1	
MANA0005	No	01025	CADMIUM, DISSOLVED (UG/L AS CD)	08/30/79-08/30/79	0	1	
MANA0029	Yes	01025	CADMIUM, DISSOLVED (UG/L AS CD)	03/25/75-03/25/75	0	1	
MANA0049	No	01025	CADMIUM, DISSOLVED (UG/L AS CD)	08/28/79-08/28/79	0	1	
MANA0001	No	01027	CADMIUM, TOTAL (UG/L AS CD)	04/18/78-07/28/94	16	14	
MANA0003	No	01027	CADMIUM, TOTAL (UG/L AS CD)	09/30/75-04/19/79	3	6	
MANA0006	No	01027	CADMIUM, TOTAL (UG/L AS CD)	08/05/71-03/27/79	7	12	
MANA0007	No	01027	CADMIUM, TOTAL (UG/L AS CD)	10/07/74-08/24/94	19	11	
MANA0015	No	01027	CADMIUM, TOTAL (UG/L AS CD)	04/18/83-04/18/83	0	1	
MANA0016	No	01027	CADMIUM, TOTAL (UG/L AS CD)	05/01/75-05/01/75	0	1	
MANA0037	No	01027	CADMIUM, TOTAL (UG/L AS CD)	04/28/77-08/24/94	17	8	
MANA0038	No	01027	CADMIUM, TOTAL (UG/L AS CD)	04/28/77-08/24/94	17	7	
MANA0041	No	01027	CADMIUM, TOTAL (UG/L AS CD)	08/02/94-08/02/94	0	1	
MANA0050	No	01027	CADMIUM, TOTAL (UG/L AS CD)	08/02/94-08/02/94	0	1	
MANA0001	No	01028	CADMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	06/02/80-06/16/95	15	10	
MANA0007	No	01028	CADMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	10/16/91-10/16/91	0	1	
MANA0009	No	01028	CADMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	08/30/77-08/30/77	0	1	
MANA0037	No	01028	CADMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	10/16/91-04/17/95	3	2	
MANA0038	No	01028	CADMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	07/17/91-04/17/95	3	3	
MANA0041	No	01028	CADMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	08/02/94-08/02/94	0	1	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot



**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0050	No	01028	CADMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	08/02/94-08/02/94	0	1	
MANA0001	No	01029	CHROMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	06/02/80-06/16/95	15	10	
MANA0007	No	01029	CHROMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	10/16/91-10/16/91	0	1	
MANA0009	No	01029	CHROMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	08/30/77-08/30/77	0	1	
MANA0037	No	01029	CHROMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	10/16/91-04/17/95	3	2	
MANA0038	No	01029	CHROMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	07/17/91-04/17/95	3	3	
MANA0041	No	01029	CHROMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	08/02/94-08/02/94	0	1	
MANA0050	No	01029	CHROMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	08/02/94-08/02/94	0	1	
MANA0005	No	01030	CHROMIUM, DISSOLVED (UG/L AS CR)	08/30/79-08/30/79	0	1	
MANA0029	Yes	01030	CHROMIUM, DISSOLVED (UG/L AS CR)	03/25/75-03/25/75	0	1	
MANA0049	No	01030	CHROMIUM, DISSOLVED (UG/L AS CR)	08/28/79-08/28/79	0	1	
MANA0001	No	01034	CHROMIUM, TOTAL (UG/L AS CR)	04/18/78-07/28/94	16	13	
MANA0003	No	01034	CHROMIUM, TOTAL (UG/L AS CR)	09/30/75-04/19/79	3	6	
MANA0006	No	01034	CHROMIUM, TOTAL (UG/L AS CR)	08/05/71-03/27/79	7	14	
MANA0007	No	01034	CHROMIUM, TOTAL (UG/L AS CR)	10/07/74-08/24/94	19	11	
MANA0015	No	01034	CHROMIUM, TOTAL (UG/L AS CR)	04/18/83-04/18/83	0	1	
MANA0016	No	01034	CHROMIUM, TOTAL (UG/L AS CR)	05/01/75-03/15/77	1	2	
MANA0037	No	01034	CHROMIUM, TOTAL (UG/L AS CR)	04/28/77-08/24/94	17	8	
MANA0038	No	01034	CHROMIUM, TOTAL (UG/L AS CR)	04/28/77-08/24/94	17	7	
MANA0041	No	01034	CHROMIUM, TOTAL (UG/L AS CR)	08/02/94-08/02/94	0	1	
MANA0050	No	01034	CHROMIUM, TOTAL (UG/L AS CR)	08/02/94-08/02/94	0	1	
MANA0029	Yes	01035	COBALT, DISSOLVED (UG/L AS CO)	03/25/75-03/25/75	0	1	
MANA0005	No	01040	COPPER, DISSOLVED (UG/L AS CU)	08/30/79-08/30/79	0	1	
MANA0029	Yes	01040	COPPER, DISSOLVED (UG/L AS CU)	03/25/75-03/25/75	0	1	
MANA0049	No	01040	COPPER, DISSOLVED (UG/L AS CU)	08/28/79-08/28/79	0	1	
MANA0001	No	01042	COPPER, TOTAL (UG/L AS CU)	04/18/78-07/28/94	16	12	
MANA0003	No	01042	COPPER, TOTAL (UG/L AS CU)	09/30/75-04/19/79	3	6	
MANA0006	No	01042	COPPER, TOTAL (UG/L AS CU)	08/05/71-03/27/79	7	14	
MANA0007	No	01042	COPPER, TOTAL (UG/L AS CU)	10/07/74-08/24/94	19	11	
MANA0015	No	01042	COPPER, TOTAL (UG/L AS CU)	04/18/83-04/18/83	0	1	
MANA0016	No	01042	COPPER, TOTAL (UG/L AS CU)	05/01/75-03/15/77	1	2	
MANA0037	No	01042	COPPER, TOTAL (UG/L AS CU)	04/28/77-08/24/94	17	8	
MANA0038	No	01042	COPPER, TOTAL (UG/L AS CU)	04/28/77-08/24/94	17	7	
MANA0041	No	01042	COPPER, TOTAL (UG/L AS CU)	08/02/94-08/02/94	0	1	
MANA0050	No	01042	COPPER, TOTAL (UG/L AS CU)	08/02/94-08/02/94	0	1	
MANA0001	No	01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	06/02/80-06/16/95	15	11	
MANA0007	No	01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	10/16/91-10/16/91	0	1	
MANA0009	No	01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	08/30/77-08/30/77	0	1	
MANA0037	No	01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	10/16/91-04/17/95	3	2	
MANA0038	No	01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	07/17/91-04/17/95	3	3	
MANA0041	No	01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	08/02/94-08/02/94	0	1	
MANA0050	No	01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	08/02/94-08/02/94	0	1	
MANA0001	No	01045	IRON, TOTAL (UG/L AS FE)	11/08/78-07/28/94	15	6	
MANA0003	No	01045	IRON, TOTAL (UG/L AS FE)	11/08/78-04/19/79	0	2	
MANA0006	No	01045	IRON, TOTAL (UG/L AS FE)	11/08/78-03/27/79	0	2	
MANA0007	No	01045	IRON, TOTAL (UG/L AS FE)	11/08/78-08/24/94	15	5	
MANA0037	No	01045	IRON, TOTAL (UG/L AS FE)	04/19/79-08/24/94	15	4	
MANA0038	No	01045	IRON, TOTAL (UG/L AS FE)	04/19/79-08/24/94	15	4	
MANA0041	No	01045	IRON, TOTAL (UG/L AS FE)	08/02/94-08/02/94	0	1	
MANA0050	No	01045	IRON, TOTAL (UG/L AS FE)	08/02/94-08/02/94	0	1	
MANA0002	No	01046	IRON, DISSOLVED (UG/L AS FE)	08/30/77-08/30/77	0	1	
MANA0004	No	01046	IRON, DISSOLVED (UG/L AS FE)	08/30/79-08/30/79	0	1	
MANA0005	No	01046	IRON, DISSOLVED (UG/L AS FE)	03/06/68-08/30/79	11	3	
MANA0009	No	01046	IRON, DISSOLVED (UG/L AS FE)	08/30/77-08/30/77	0	1	
MANA0018	No	01046	IRON, DISSOLVED (UG/L AS FE)	08/30/79-08/30/79	0	1	
MANA0023	Yes	01046	IRON, DISSOLVED (UG/L AS FE)	06/24/80-06/24/80	0	1	
MANA0026	No	01046	IRON, DISSOLVED (UG/L AS FE)	05/15/69-08/28/79	10	2	
MANA0029	Yes	01046	IRON, DISSOLVED (UG/L AS FE)	03/25/75-03/25/75	0	1	
MANA0031	No	01046	IRON, DISSOLVED (UG/L AS FE)	03/14/68-05/15/69	1	7	
MANA0036	No	01046	IRON, DISSOLVED (UG/L AS FE)	08/29/79-08/24/94	14	2	
MANA0039	No	01046	IRON, DISSOLVED (UG/L AS FE)	08/28/79-08/28/79	0	1	
MANA0040	No	01046	IRON, DISSOLVED (UG/L AS FE)	08/28/79-08/28/79	0	1	
MANA0049	No	01046	IRON, DISSOLVED (UG/L AS FE)	08/28/79-08/28/79	0	1	
MANA0005	No	01049	LEAD, DISSOLVED (UG/L AS PB)	08/30/79-08/30/79	0	1	
MANA0029	Yes	01049	LEAD, DISSOLVED (UG/L AS PB)	03/25/75-03/25/75	0	1	
MANA0042	No	01049	LEAD, DISSOLVED (UG/L AS PB)	08/06/79-01/28/80	0	7	
MANA0043	No	01049	LEAD, DISSOLVED (UG/L AS PB)	08/06/79-01/28/80	0	7	
MANA0045	No	01049	LEAD, DISSOLVED (UG/L AS PB)	06/18/79-02/11/80	0	31	
MANA0047	No	01049	LEAD, DISSOLVED (UG/L AS PB)	06/18/79-02/11/80	0	31	
MANA0048	No	01049	LEAD, DISSOLVED (UG/L AS PB)	06/18/79-12/01/80	1	66	
MANA0049	No	01049	LEAD, DISSOLVED (UG/L AS PB)	08/28/79-08/28/79	0	1	
MANA0001	No	01051	LEAD, TOTAL (UG/L AS PB)	04/18/78-07/28/94	16	14	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0003	No	01051	LEAD, TOTAL (UG/L AS PB)	09/30/75-04/19/79	3	6	
MANA0006	No	01051	LEAD, TOTAL (UG/L AS PB)	08/05/71-03/27/79	7	13	
MANA0007	No	01051	LEAD, TOTAL (UG/L AS PB)	10/07/74-08/24/94	19	14	
MANA0015	No	01051	LEAD, TOTAL (UG/L AS PB)	04/18/83-04/18/83	0	1	
MANA0016	No	01051	LEAD, TOTAL (UG/L AS PB)	05/01/75-03/15/77	1	2	
MANA0037	No	01051	LEAD, TOTAL (UG/L AS PB)	04/28/77-08/24/94	17	8	
MANA0038	No	01051	LEAD, TOTAL (UG/L AS PB)	04/28/77-08/24/94	17	7	
MANA0041	No	01051	LEAD, TOTAL (UG/L AS PB)	08/02/94-08/02/94	0	1	
MANA0042	No	01051	LEAD, TOTAL (UG/L AS PB)	08/06/79-01/28/80	0	7	
MANA0043	No	01051	LEAD, TOTAL (UG/L AS PB)	08/06/79-01/28/80	0	7	
MANA0045	No	01051	LEAD, TOTAL (UG/L AS PB)	06/18/79-02/11/80	0	31	
MANA0047	No	01051	LEAD, TOTAL (UG/L AS PB)	06/18/79-02/11/80	0	31	
MANA0048	No	01051	LEAD, TOTAL (UG/L AS PB)	06/18/79-12/01/80	1	66	
MANA0050	No	01051	LEAD, TOTAL (UG/L AS PB)	08/02/94-08/02/94	0	1	
MANA0001	No	01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	06/02/80-06/16/95	15	10	
MANA0007	No	01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	10/16/91-10/16/91	0	1	
MANA0009	No	01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	08/30/77-08/30/77	0	1	
MANA0037	No	01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	10/16/91-04/17/95	3	2	
MANA0038	No	01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	07/17/91-04/17/95	3	3	
MANA0041	No	01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	08/02/94-08/02/94	0	1	
MANA0050	No	01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	08/02/94-08/02/94	0	1	
MANA0001	No	01053	MANGANESE IN BOTTOM DEPOSITS (MG/KG AS MN DRY WGT)	06/16/95-06/16/95	0	1	
MANA0007	No	01053	MANGANESE IN BOTTOM DEPOSITS (MG/KG AS MN DRY WGT)	10/16/91-10/16/91	0	1	
MANA0037	No	01053	MANGANESE IN BOTTOM DEPOSITS (MG/KG AS MN DRY WGT)	10/16/91-04/17/95	3	2	
MANA0038	No	01053	MANGANESE IN BOTTOM DEPOSITS (MG/KG AS MN DRY WGT)	07/17/91-04/17/95	3	2	
MANA0041	No	01053	MANGANESE IN BOTTOM DEPOSITS (MG/KG AS MN DRY WGT)	08/02/94-08/02/94	0	1	
MANA0050	No	01053	MANGANESE IN BOTTOM DEPOSITS (MG/KG AS MN DRY WGT)	08/02/94-08/02/94	0	1	
MANA0001	No	01055	MANGANESE, TOTAL (UG/L AS MN)	11/08/78-07/28/94	15	5	
MANA0003	No	01055	MANGANESE, TOTAL (UG/L AS MN)	11/08/78-04/19/79	0	2	
MANA0006	No	01055	MANGANESE, TOTAL (UG/L AS MN)	11/08/78-03/27/79	0	2	
MANA0007	No	01055	MANGANESE, TOTAL (UG/L AS MN)	11/08/78-08/24/94	15	4	
MANA0015	No	01055	MANGANESE, TOTAL (UG/L AS MN)	04/18/83-04/18/83	0	1	
MANA0037	No	01055	MANGANESE, TOTAL (UG/L AS MN)	04/19/79-08/24/94	15	3	
MANA0038	No	01055	MANGANESE, TOTAL (UG/L AS MN)	04/19/79-08/24/94	15	2	
MANA0041	No	01055	MANGANESE, TOTAL (UG/L AS MN)	08/02/94-08/02/94	0	1	
MANA0050	No	01055	MANGANESE, TOTAL (UG/L AS MN)	08/02/94-08/02/94	0	1	
MANA0005	No	01056	MANGANESE, DISSOLVED (UG/L AS MN)	08/30/79-08/30/79	0	1	
MANA0036	No	01056	MANGANESE, DISSOLVED (UG/L AS MN)	08/24/94-08/24/94	0	1	
MANA0049	No	01056	MANGANESE, DISSOLVED (UG/L AS MN)	08/28/79-08/28/79	0	1	
MANA0001	No	01059	THALLIUM, TOTAL (UG/L AS TL)	09/15/88-04/15/93	4	3	
MANA0007	No	01059	THALLIUM, TOTAL (UG/L AS TL)	07/17/91-04/29/93	1	2	
MANA0037	No	01059	THALLIUM, TOTAL (UG/L AS TL)	07/17/91-04/29/93	1	2	
MANA0038	No	01059	THALLIUM, TOTAL (UG/L AS TL)	04/29/93-04/29/93	0	1	
MANA0041	No	01059	THALLIUM, TOTAL (UG/L AS TL)	08/02/94-08/02/94	0	1	
MANA0050	No	01059	THALLIUM, TOTAL (UG/L AS TL)	08/02/94-08/02/94	0	1	
MANA0001	No	01065	NICKEL, DISSOLVED (UG/L AS NI)	04/18/78-04/19/79	1	3	
MANA0003	No	01065	NICKEL, DISSOLVED (UG/L AS NI)	09/30/75-04/19/79	3	6	
MANA0006	No	01065	NICKEL, DISSOLVED (UG/L AS NI)	05/11/73-03/27/79	5	9	
MANA0007	No	01065	NICKEL, DISSOLVED (UG/L AS NI)	10/07/74-04/19/79	4	8	
MANA0016	No	01065	NICKEL, DISSOLVED (UG/L AS NI)	05/01/75-03/15/77	1	2	
MANA0029	Yes	01065	NICKEL, DISSOLVED (UG/L AS NI)	03/25/75-03/25/75	0	1	
MANA0037	No	01065	NICKEL, DISSOLVED (UG/L AS NI)	04/28/77-04/19/79	1	5	
MANA0038	No	01065	NICKEL, DISSOLVED (UG/L AS NI)	04/28/77-04/19/79	1	5	
MANA0001	No	01067	NICKEL, TOTAL (UG/L AS NI)	10/02/79-07/28/94	14	10	
MANA0007	No	01067	NICKEL, TOTAL (UG/L AS NI)	07/17/91-08/24/94	3	3	
MANA0015	No	01067	NICKEL, TOTAL (UG/L AS NI)	04/18/83-04/18/83	0	1	
MANA0037	No	01067	NICKEL, TOTAL (UG/L AS NI)	07/17/91-08/24/94	3	3	
MANA0038	No	01067	NICKEL, TOTAL (UG/L AS NI)	04/29/93-08/24/94	1	2	
MANA0041	No	01067	NICKEL, TOTAL (UG/L AS NI)	08/02/94-08/02/94	0	1	
MANA0050	No	01067	NICKEL, TOTAL (UG/L AS NI)	08/02/94-08/02/94	0	1	
MANA0001	No	01068	NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	06/02/80-06/16/95	15	10	
MANA0007	No	01068	NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	10/16/91-10/16/91	0	1	
MANA0037	No	01068	NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	10/16/91-04/17/95	3	2	
MANA0038	No	01068	NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	07/17/91-04/17/95	3	3	
MANA0041	No	01068	NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	08/02/94-08/02/94	0	1	
MANA0050	No	01068	NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	08/02/94-08/02/94	0	1	
MANA0001	No	01069	NICKEL, TOTAL IN FISH OR ANIMALS-WET WEIGHT MG/KG	06/30/87-07/12/90	3	6	
MANA0001	No	01073	THALLIUM, TISSUE, WET WEIGHT, MG/KG	07/12/90-07/12/90	0	3	
MANA0029	Yes	01075	SILVER, DISSOLVED (UG/L AS AG)	03/25/75-03/25/75	0	1	
MANA0001	No	01077	SILVER, TOTAL (UG/L AS AG)	09/15/88-09/15/88	0	2	
MANA0041	No	01077	SILVER, TOTAL (UG/L AS AG)	08/02/94-08/02/94	0	1	
MANA0050	No	01077	SILVER, TOTAL (UG/L AS AG)	08/02/94-08/02/94	0	1	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

# Station/Parameter Period of Record Tabulation From 11/19/52 To 07/17/96

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0001	No	01078	SILVER IN BOTTOM DEPOSITS (MG/KG AS AG DRY WGT)	08/07/92-06/16/95	2	2	
MANA0037	No	01078	SILVER IN BOTTOM DEPOSITS (MG/KG AS AG DRY WGT)	04/17/95-04/17/95	0	1	
MANA0038	No	01078	SILVER IN BOTTOM DEPOSITS (MG/KG AS AG DRY WGT)	07/21/92-04/17/95	2	2	
MANA0041	No	01078	SILVER IN BOTTOM DEPOSITS (MG/KG AS AG DRY WGT)	08/02/94-08/02/94	0	1	
MANA0050	No	01078	SILVER IN BOTTOM DEPOSITS (MG/KG AS AG DRY WGT)	08/02/94-08/02/94	0	1	
MANA0005	No	01090	ZINC, DISSOLVED (UG/L AS ZN)	08/30/79-08/30/79	0	1	
MANA0029	Yes	01090	ZINC, DISSOLVED (UG/L AS ZN)	03/25/75-03/25/75	0	1	
MANA0042	No	01090	ZINC, DISSOLVED (UG/L AS ZN)	08/06/79-01/28/80	0	7	
MANA0043	No	01090	ZINC, DISSOLVED (UG/L AS ZN)	08/06/79-01/28/80	0	7	
MANA0045	No	01090	ZINC, DISSOLVED (UG/L AS ZN)	06/18/79-02/11/80	0	29	
MANA0047	No	01090	ZINC, DISSOLVED (UG/L AS ZN)	06/18/79-02/11/80	0	29	
MANA0048	No	01090	ZINC, DISSOLVED (UG/L AS ZN)	06/18/79-11/25/80	1	58	
MANA0049	No	01090	ZINC, DISSOLVED (UG/L AS ZN)	08/28/79-08/28/79	0	1	
MANA0001	No	01092	ZINC, TOTAL (UG/L AS ZN)	04/18/78-07/28/94	16	12	
MANA0003	No	01092	ZINC, TOTAL (UG/L AS ZN)	09/30/75-04/19/79	3	6	
MANA0006	No	01092	ZINC, TOTAL (UG/L AS ZN)	08/05/71-03/27/79	7	14	
MANA0007	No	01092	ZINC, TOTAL (UG/L AS ZN)	10/07/74-08/24/94	19	11	
MANA0015	No	01092	ZINC, TOTAL (UG/L AS ZN)	04/18/83-04/18/83	0	1	
MANA0016	No	01092	ZINC, TOTAL (UG/L AS ZN)	05/01/75-03/15/77	1	2	
MANA0037	No	01092	ZINC, TOTAL (UG/L AS ZN)	04/28/77-08/24/94	17	8	
MANA0038	No	01092	ZINC, TOTAL (UG/L AS ZN)	04/28/77-08/24/94	17	7	
MANA0041	No	01092	ZINC, TOTAL (UG/L AS ZN)	08/02/94-08/02/94	0	1	
MANA0042	No	01092	ZINC, TOTAL (UG/L AS ZN)	08/06/79-01/28/80	0	7	
MANA0043	No	01092	ZINC, TOTAL (UG/L AS ZN)	08/06/79-01/28/80	0	7	
MANA0045	No	01092	ZINC, TOTAL (UG/L AS ZN)	06/18/79-02/11/80	0	30	
MANA0047	No	01092	ZINC, TOTAL (UG/L AS ZN)	06/18/79-02/11/80	0	30	
MANA0048	No	01092	ZINC, TOTAL (UG/L AS ZN)	06/18/79-12/01/80	1	65	
MANA0050	No	01092	ZINC, TOTAL (UG/L AS ZN)	08/02/94-08/02/94	0	1	
MANA0001	No	01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	06/02/80-06/16/95	15	10	
MANA0007	No	01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	10/16/91-10/16/91	0	1	
MANA0009	No	01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	08/30/77-08/30/77	0	1	
MANA0037	No	01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	10/16/91-04/17/95	3	2	
MANA0038	No	01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	07/17/91-04/17/95	3	3	
MANA0041	No	01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	08/02/94-08/02/94	0	1	
MANA0050	No	01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	08/02/94-08/02/94	0	1	
MANA0041	No	01097	ANTIMONY, TOTAL (UG/L AS SB)	08/02/94-08/02/94	0	1	
MANA0050	No	01097	ANTIMONY, TOTAL (UG/L AS SB)	08/02/94-08/02/94	0	1	
MANA0001	No	01098	ANTIMONY IN BOTTOM DEPOSITS (MG/KG AS SB DRY WGT)	06/16/95-06/16/95	0	1	
MANA0037	No	01098	ANTIMONY IN BOTTOM DEPOSITS (MG/KG AS SB DRY WGT)	04/17/95-04/17/95	0	1	
MANA0038	No	01098	ANTIMONY IN BOTTOM DEPOSITS (MG/KG AS SB DRY WGT)	04/17/95-04/17/95	0	1	
MANA0029	Yes	01106	ALUMINUM, DISSOLVED (UG/L AS AL)	03/25/75-03/25/75	0	1	
MANA0001	No	01108	ALUMINUM IN BOTTOM DEPOSITS (MG/KG AS AL DRY WGT)	06/16/95-06/16/95	0	1	
MANA0037	No	01108	ALUMINUM IN BOTTOM DEPOSITS (MG/KG AS AL DRY WGT)	04/17/95-04/17/95	0	1	
MANA0038	No	01108	ALUMINUM IN BOTTOM DEPOSITS (MG/KG AS AL DRY WGT)	04/17/95-04/17/95	0	1	
MANA0005	No	01145	SELENIUM, DISSOLVED (UG/L AS SE)	08/30/79-08/30/79	0	1	
MANA0049	No	01145	SELENIUM, DISSOLVED (UG/L AS SE)	08/28/79-08/28/79	0	1	
MANA0001	No	01147	SELENIUM, TOTAL (UG/L AS SE)	09/15/88-07/28/94	5	4	
MANA0007	No	01147	SELENIUM, TOTAL (UG/L AS SE)	07/17/91-08/24/94	3	3	
MANA0037	No	01147	SELENIUM, TOTAL (UG/L AS SE)	07/17/91-08/24/94	3	3	
MANA0038	No	01147	SELENIUM, TOTAL (UG/L AS SE)	04/29/93-08/24/94	1	2	
MANA0041	No	01147	SELENIUM, TOTAL (UG/L AS SE)	08/02/94-08/02/94	0	1	
MANA0050	No	01147	SELENIUM, TOTAL (UG/L AS SE)	08/02/94-08/02/94	0	1	
MANA0001	No	01148	SELENIUM IN BOTTOM DEPOSITS (MG/KG AS SE DRY WGT)	05/04/83-06/16/95	12	6	
MANA0007	No	01148	SELENIUM IN BOTTOM DEPOSITS (MG/KG AS SE DRY WGT)	10/16/91-10/16/91	0	1	
MANA0037	No	01148	SELENIUM IN BOTTOM DEPOSITS (MG/KG AS SE DRY WGT)	10/16/91-04/17/95	3	2	
MANA0038	No	01148	SELENIUM IN BOTTOM DEPOSITS (MG/KG AS SE DRY WGT)	07/17/91-04/17/95	3	3	
MANA0041	No	01148	SELENIUM IN BOTTOM DEPOSITS (MG/KG AS SE DRY WGT)	08/02/94-08/02/94	0	1	
MANA0050	No	01148	SELENIUM IN BOTTOM DEPOSITS (MG/KG AS SE DRY WGT)	08/02/94-08/02/94	0	1	
MANA0001	No	01149	SELENIUM, TOTAL IN FISH OR ANIMALS WET WGT MG/KG	07/12/90-07/12/90	0	3	
MANA0001	No	01170	IRON IN BOTTOM DEPOSITS (MG/KG AS FE DRY WGT)	06/16/95-06/16/95	0	1	
MANA0037	No	01170	IRON IN BOTTOM DEPOSITS (MG/KG AS FE DRY WGT)	04/17/95-04/17/95	0	1	
MANA0038	No	01170	IRON IN BOTTOM DEPOSITS (MG/KG AS FE DRY WGT)	04/17/95-04/17/95	0	1	
MANA0041	No	01170	IRON IN BOTTOM DEPOSITS (MG/KG AS FE DRY WGT)	08/02/94-08/02/94	0	1	
MANA0050	No	01170	IRON IN BOTTOM DEPOSITS (MG/KG AS FE DRY WGT)	08/02/94-08/02/94	0	1	
MANA0001	No	01351	FLOW, STRM,1DRY,2LOW,3NORM,4FLOOD,5ABOVE NORM,CODE	07/10/79-07/17/96	17	165	
MANA0007	No	01351	FLOW, STRM,1DRY,2LOW,3NORM,4FLOOD,5ABOVE NORM,CODE	09/25/90-07/15/96	5	23	
MANA0037	No	01351	FLOW, STRM,1DRY,2LOW,3NORM,4FLOOD,5ABOVE NORM,CODE	09/25/90-07/15/96	5	22	
MANA0038	No	01351	FLOW, STRM,1DRY,2LOW,3NORM,4FLOOD,5ABOVE NORM,CODE	09/25/90-07/15/96	5	22	
MANA0036	No	04024	PROPACHLOR,DISSOLVED,WATER,TOTAL RECOVERABLE UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	04028	BUTYLATE, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	04035	SIMAZINE, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	04037	PROMETON, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	08/24/94-08/24/94	0	1	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

# Station/Parameter Period of Record Tabulation From 11/19/52 To 07/17/96

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0036	No	04040	DEETHYL ATRAZINE,DISSOLVED,WATER,TOT REC UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	04041	CYANAZINE,DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	04095	FONOFOS, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	08/24/94-08/24/94	0	1	
MANA0013	No	31501	COLIFORM,TOT,MEMBRANE FILTER,IMMED.M-ENDO MED,35C	11/26/73-03/11/74	0	4	
MANA0036	No	31501	COLIFORM,TOT,MEMBRANE FILTER,IMMED.M-ENDO MED,35C	11/26/73-04/16/74	0	6	
MANA0003	No	31505	COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	04/28/77-04/28/77	0	1	
MANA0006	No	31505	COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	06/30/77-02/03/78	0	2	
MANA0007	No	31505	COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	11/22/76-02/03/78	1	6	
MANA0012	No	31505	COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	03/13/73-05/13/74	1	5	
MANA0013	No	31505	COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	03/13/73-05/13/74	1	5	
MANA0016	No	31505	COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	05/01/75-06/30/77	2	11	
MANA0035	No	31505	COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	03/13/73-05/13/74	1	5	
MANA0036	No	31505	COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	03/13/73-05/13/74	1	5	
MANA0006	No	31506	COLIFORM,TOT,MPN, CONFIRMED TEST, TUBE CONFIG.	06/10/76-06/10/76	0	1	
MANA0015	No	31506	COLIFORM,TOT,MPN, CONFIRMED TEST, TUBE CONFIG.	04/06/77-04/06/77	0	1	
MANA0008	No	31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	02/21/73-11/21/73	0	5	
MANA0010	No	31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	02/21/73-11/21/73	0	5	
MANA0011	No	31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	02/21/73-11/21/73	0	5	
MANA0012	No	31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	03/13/73-06/21/78	5	41	
MANA0013	No	31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	03/13/73-12/02/74	1	11	
MANA0014	No	31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	02/22/73-06/29/73	0	3	
MANA0035	No	31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	03/13/73-06/21/78	5	44	
MANA0036	No	31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	03/13/73-12/02/74	1	11	
MANA0050	No	31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	08/02/94-08/02/94	0	1	
MANA0001	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/18/78-07/17/96	18	146	T,A,S
MANA0003	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	10/07/74-06/26/79	4	41	
MANA0006	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	07/21/71-05/09/79	7	69	
MANA0007	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	10/07/74-04/30/96	21	68	T,S
MANA0013	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/04/73-06/24/74	0	6	
MANA0015	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/06/77-04/18/83	6	2	
MANA0016	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	11/19/74-05/09/79	4	22	
MANA0017	Yes	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/02/82-10/27/94	11	39	
MANA0019	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	01/08/75-06/10/76	1	2	
MANA0020	Yes	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	11/28/92-10/27/94	1	25	
MANA0021	Yes	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/02/82-10/27/94	11	40	
MANA0022	Yes	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/02/82-10/27/94	11	54	
MANA0024	Yes	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/02/82-10/27/94	11	39	
MANA0025	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	06/10/76-06/10/76	0	1	
MANA0027	Yes	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/02/82-06/14/83	0	15	
MANA0028	Yes	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/02/82-10/27/94	11	41	
MANA0030	Yes	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/02/82-10/27/94	11	54	
MANA0032	Yes	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	11/28/92-10/27/94	1	25	
MANA0033	Yes	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	11/28/92-10/27/94	1	25	
MANA0034	Yes	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	11/28/92-10/27/94	1	24	
MANA0036	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/03/73-06/24/74	0	8	
MANA0037	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/19/76-04/30/96	20	32	S
MANA0038	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/19/76-04/30/96	20	35	S
MANA0041	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/29/75-08/02/94	19	2	
MANA0050	No	31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/29/75-08/02/94	19	2	
MANA0012	No	31678	FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATION	06/20/73-07/23/73	0	2	
MANA0013	No	31678	FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATION	06/20/73-07/23/73	0	2	
MANA0035	No	31678	FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATION	06/20/73-07/23/73	0	2	
MANA0036	No	31678	FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATION	06/20/73-07/23/73	0	2	
MANA0013	No	31679	FECAL STREPTOCOCCI,MF M-ENTEROCOCCUS AGAR,35C,48H	12/04/73-04/16/74	0	5	
MANA0036	No	31679	FECAL STREPTOCOCCI,MF M-ENTEROCOCCUS AGAR,35C,48H	12/03/73-04/16/74	0	7	
MANA0001	No	32240	TANNIN AND LIGNIN (MG/L)	08/06/92-10/06/92	0	2	
MANA0007	No	32240	TANNIN AND LIGNIN (MG/L)	07/21/92-01/06/93	0	2	
MANA0037	No	32240	TANNIN AND LIGNIN (MG/L)	07/21/92-01/06/93	0	2	
MANA0038	No	32240	TANNIN AND LIGNIN (MG/L)	07/21/92-01/06/93	0	2	
MANA0001	No	34204	ACENAPHTHYLENE WET WGTISM/G/KG	07/12/90-07/12/90	0	2	
MANA0001	No	34209	ACENAPHTHENE WET WGTISM/G/KG	07/12/90-07/12/90	0	2	
MANA0001	No	34224	ANTHRACENE WET WGTISM/G/KG	07/12/90-07/12/90	0	2	
MANA0001	No	34234	BENZO(B)FLUORANTHENE, TISSUE, WET WGT,MG/KG	07/12/90-07/12/90	0	2	
MANA0001	No	34246	BENZO(K)FLUORANTHENE, WET WT, TISSUE MG/KG	07/12/90-07/12/90	0	2	
MANA0001	No	34251	BENZO-A-PYRENE WET WGTISM/G/KG	07/12/90-07/12/90	0	2	
MANA0001	No	34252	BERYLLIUM WET WGTISM/G/KG	07/12/90-07/12/90	0	3	
MANA0036	No	34253	A-BHC-ALPHA DISSUG/L	08/24/94-08/24/94	0	1	
MANA0001	No	34258	B-BHC-BETA WET WGTISM/G/KG	06/30/87-07/12/90	3	6	
MANA0001	No	34259	DELTA BENZENE HEXACHLORIDE TOTWUG/L	07/09/85-08/02/93	8	3	
MANA0007	No	34259	DELTA BENZENE HEXACHLORIDE TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0037	No	34259	DELTA BENZENE HEXACHLORIDE TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0038	No	34259	DELTA BENZENE HEXACHLORIDE TOTWUG/L	08/02/93-08/02/93	0	1	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0001	No	34263	DELTA BENZENE HEXACHLORIDE WET WGT TISM/G/KG	06/30/87-07/12/90	3	6	
MANA0001	No	34324	CHRYSENE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34340	DIETHYL PHTHALATE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34345	DIMETHYL PHTHALATE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34351	ENDOSULFAN SULFATE TOTWUG/L	07/09/85-08/02/93	8	3	
MANA0007	No	34351	ENDOSULFAN SULFATE TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0037	No	34351	ENDOSULFAN SULFATE TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0038	No	34351	ENDOSULFAN SULFATE TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0001	No	34356	ENDOSULFAN, BETA TOTWUG/L	07/09/85-08/02/93	8	3	
MANA0007	No	34356	ENDOSULFAN, BETA TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0037	No	34356	ENDOSULFAN, BETA TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0038	No	34356	ENDOSULFAN, BETA TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0001	No	34360	ENDOSULFAN, BETA WET WGT TISM/G/KG	06/30/87-07/12/90	3	6	
MANA0001	No	34361	ENDOSULFAN, ALPHA TOTWUG/L	07/09/85-08/02/93	8	3	
MANA0007	No	34361	ENDOSULFAN, ALPHA TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0037	No	34361	ENDOSULFAN, ALPHA TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0038	No	34361	ENDOSULFAN, ALPHA TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0001	No	34365	ENDOSULFAN, ALPHA WET WGT TISM/G/KG	06/30/87-07/12/90	3	6	
MANA0001	No	34366	ENDRIN ALDEHYDE TOTWUG/L	07/09/85-08/02/93	8	3	
MANA0007	No	34366	ENDRIN ALDEHYDE TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0037	No	34366	ENDRIN ALDEHYDE TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0038	No	34366	ENDRIN ALDEHYDE TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0001	No	34380	FLUORANTHENE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34385	FLUORENE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34407	INDENO (1,2,3-CD) PYRENE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34437	N-NITROSODIPHENYLAMINE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34446	NAPHTHALENE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34465	PHENANTHRENE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34473	PYRENE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34480	THALLIUM DRY WGT BOTMG/KG	05/04/83-06/16/95	12	5	
MANA0007	No	34480	THALLIUM DRY WGT BOTMG/KG	10/16/91-10/16/91	0	1	
MANA0037	No	34480	THALLIUM DRY WGT BOTMG/KG	10/16/91-04/17/95	3	2	
MANA0038	No	34480	THALLIUM DRY WGT BOTMG/KG	07/17/91-04/17/95	3	3	
MANA0041	No	34480	THALLIUM DRY WGT BOTMG/KG	08/02/94-08/02/94	0	1	
MANA0050	No	34480	THALLIUM DRY WGT BOTMG/KG	08/02/94-08/02/94	0	1	
MANA0001	No	34525	BENZO(GH)PERYLENE1,12-BENZOPERYLENWET WGT TISM/G/KG	07/12/90-07/12/90	0	2	
MANA0001	No	34530	BENZO(A)ANTHRACENE1,2-BENZANTHRACENWET WGT TISM/G/KG	07/12/90-07/12/90	0	2	
MANA0001	No	34555	1,2,4-TRICHLOROBENZENE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34585	2-CHLORONAPHTHALENE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34635	3,3'-DICHLOROBENZIDINE WET WGT TISM/G/KG	07/12/90-07/12/90	0	1	
MANA0001	No	34640	4-BROMOPHENYL PHENYL ETHER WET WGT TISM/G/KG	07/12/90-07/12/90	0	2	
MANA0036	No	34653	P,P'-DDE DISSUG/L	08/24/94-08/24/94	0	1	
MANA0001	No	34664	PCB - 1221 WET WGT TISM/G/KG	07/12/90-07/12/90	0	3	
MANA0001	No	34667	PCB - 1232 WET WGT TISM/G/KG	07/12/90-07/12/90	0	3	
MANA0001	No	34669	PCB - 1248 WET WGT TISM/G/KG	07/12/90-07/12/90	0	3	
MANA0001	No	34670	PCB - 1260 WET WGT TISM/G/KG	06/30/87-07/12/90	3	6	
MANA0001	No	34671	PCB - 1016 TOTWUG/L	07/09/85-08/02/93	8	3	
MANA0007	No	34671	PCB - 1016 TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0037	No	34671	PCB - 1016 TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0038	No	34671	PCB - 1016 TOTWUG/L	08/02/93-08/02/93	0	1	
MANA0001	No	34674	PCB - 1016 WET WGT TISM/G/KG	07/12/90-07/12/90	0	3	
MANA0001	No	34680	ALDRIN IN FISH TISSUE WET WEIGHT MG/KG	06/30/87-07/12/90	3	6	
MANA0001	No	34682	CHLORDANE(TECH MIX & METABS),TISSUEWET WGT T,MG/KG	06/30/87-07/12/90	3	6	
MANA0001	No	34685	ENDRIN WET WGT TISM/G/KG	06/30/87-07/12/90	3	6	
MANA0001	No	34686	HEPTACHLOR EPOXIDE WET WGT TISM/G/KG	06/30/87-07/12/90	3	5	
MANA0001	No	34687	HEPTACHLOR WET WGT TISM/G/KG	06/30/87-07/12/90	3	6	
MANA0001	No	34688	HEXACHLOROBENZENE WET WGT TISM/G/KG	06/30/87-07/12/90	3	4	
MANA0001	No	34689	PCB - 1242 WET WGT TISM/G/KG	07/12/90-07/12/90	0	3	
MANA0001	No	34690	PCB - 1254 WET WGT TISM/G/KG	06/30/87-07/12/90	3	6	
MANA0001	No	34691	TOXAPHENE WET WGT TISM/G/KG	06/30/87-07/12/90	3	6	
MANA0005	No	34790	SURFACTANTS, AS CTAS, WATER MG/L	08/17/92-08/17/92	0	1	
MANA0005	No	34795	ANTIMONY, BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34800	ARSENIC, BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34810	BERYLLIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34816	BISMUTH,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34825	CADMIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34830	CALCIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34835	CERIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34840	COBALT,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34845	CHROMIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34850	COPPER,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34855	EUROPIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

# Station/Parameter Period of Record Tabulation From 11/19/52 To 07/17/96

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0005	No	34860	GALLIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34870	GOLD,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34875	HOLMIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34880	IRON,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34885	LANTHANUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34890	LEAD,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34895	LITHIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34900	MAGNESIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34905	MANGANESE,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34910	MERCURY,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34915	MOLYBDENUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34920	NEODYMIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34925	NICKEL,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34930	NIOBIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34935	PHOSPHORUS,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34940	POTASSIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34945	SCANDIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34950	SELENIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34955	SILVER,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34960	SODIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34965	STRONTIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34970	SULFUR,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34975	TANTALUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34980	THORIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	34985	TIN,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	35000	URANIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	35005	VANADIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	35010	YTTRIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	35015	YTTERBIUM,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0005	No	35020	ZINC,BEDLOAD SED,WET SIEVE DIAM	08/17/92-08/17/92	0	1	
MANA0001	No	38442	DICAMBA (BANVEL) WATER,DISSUG/L	07/09/85-07/15/86	1	2	
MANA0001	No	38451	DICHLORPROP WATER,SUSPUG/L	07/09/85-07/15/86	1	2	
MANA0001	No	38744	CHLORPYRIFOS-METHYL TISWETWGTMG/KG	07/12/90-07/12/90	0	3	
MANA0001	No	38745	2,4-DB WATER, TOTUG/L	07/09/85-08/02/93	8	3	
MANA0007	No	38745	2,4-DB WATER, TOTUG/L	08/02/93-08/02/93	0	1	
MANA0037	No	38745	2,4-DB WATER, TOTUG/L	08/02/93-08/02/93	0	1	
MANA0038	No	38745	2,4-DB WATER, TOTUG/L	08/02/93-08/02/93	0	1	
MANA0036	No	38933	CHLORPYRIFOS,DISSOLVED UG/L	08/24/94-08/24/94	0	1	
MANA0001	No	39032	PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE UG/L	09/10/79-08/02/93	13	6	
MANA0007	No	39032	PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0037	No	39032	PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0038	No	39032	PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0001	No	39061	PCP (PENTACHLOROPHENOL) IN BOT DEPOS DRY SOL UG/KG	06/12/84-06/16/95	11	6	
MANA0007	No	39061	PCP (PENTACHLOROPHENOL) IN BOT DEPOS DRY SOL UG/KG	10/16/91-10/16/91	0	1	
MANA0037	No	39061	PCP (PENTACHLOROPHENOL) IN BOT DEPOS DRY SOL UG/KG	10/16/91-04/17/95	3	2	
MANA0038	No	39061	PCP (PENTACHLOROPHENOL) IN BOT DEPOS DRY SOL UG/KG	07/21/92-04/17/95	2	2	
MANA0001	No	39062	CHLORDANE-CIS ISOMER,WHOLE WATER SAMPL (UG/L)	09/10/79-08/06/81	1	3	
MANA0001	No	39065	CHLORDANE-TRNS ISOMER,WHOLE WATER SAMPL (UG/L)	09/10/79-08/06/81	1	3	
MANA0001	No	39068	CHLORDANE-NONACHLOR,CIS ISO,WHOLE WTR (UG/L)	09/10/79-08/06/81	1	3	
MANA0001	No	39069	CHLORDANE-NONACHLOR,CIS ISO,TISSUE WET WGT(UG/G)	06/30/87-07/12/90	3	6	
MANA0001	No	39071	CHLORDANE-NONACHLOR,TPANS ISO,WHOLE WTR (UG/L)	09/10/79-08/06/81	1	3	
MANA0001	No	39072	CHLORDANE-NONACHLOR,TRANS ISO,TISSUE,WET WT,UG/G	06/30/87-07/12/90	3	6	
MANA0001	No	39074	BHC-ALPHA ISOMER,TISSUE UG/G WET WGT	06/30/87-07/12/90	3	6	
MANA0036	No	39086	ALKALINITY,WATER,DISS,INCR TIT,FIELD,AS CACO3,MG/L	08/24/94-08/24/94	0	1	
MANA0001	No	39099	BIS(2-ETHYLHEXYL)PHTHALATE,TISSUE,WET WGT,MG/KG	07/12/90-07/12/90	0	1	
MANA0001	No	39113	DIBUTYL PHTHALATES IN FISH,ANIMAL WET WGT UG/KG	07/12/90-07/12/90	0	1	
MANA0001	No	39290	DDT TOTAL IN TISSUE WET WGT BASIS (UG/G)	06/30/87-07/12/90	3	6	
MANA0001	No	39300	P,P' DDT IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	13	6	
MANA0007	No	39300	P,P' DDT IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39300	P,P' DDT IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39300	P,P' DDT IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0001	No	39305	O,P' DDT IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/06/81	1	3	
MANA0001	No	39310	P,P' DDD IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	13	6	
MANA0007	No	39310	P,P' DDD IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39310	P,P' DDD IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39310	P,P' DDD IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0001	No	39315	O,P' DDD IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/06/81	1	3	
MANA0001	No	39320	P,P' DDE IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	13	6	
MANA0007	No	39320	P,P' DDE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39320	P,P' DDE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39320	P,P' DDE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0001	No	39327	ORTHO PARA DDE IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/06/81	1	3	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0001	No	39330	ALDRIN IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	13	10	
MANA0007	No	39330	ALDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39330	ALDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39330	ALDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0001	No	39333	ALDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	04/16/81-06/16/95	14	5	
MANA0009	No	39333	ALDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	08/30/77-08/30/77	0	1	
MANA0037	No	39333	ALDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	04/17/95-04/17/95	0	1	
MANA0038	No	39333	ALDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	07/21/92-04/17/95	2	2	
MANA0001	No	39337	ALPHA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	07/09/85-08/02/93	8	3	
MANA0007	No	39337	ALPHA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	08/02/93-08/02/93	0	1	
MANA0037	No	39337	ALPHA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	08/02/93-08/02/93	0	1	
MANA0038	No	39337	ALPHA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	08/02/93-08/02/93	0	1	
MANA0001	No	39338	BETA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	07/09/85-08/02/93	8	3	
MANA0007	No	39338	BETA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	08/02/93-08/02/93	0	1	
MANA0037	No	39338	BETA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	08/02/93-08/02/93	0	1	
MANA0038	No	39338	BETA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	08/02/93-08/02/93	0	1	
MANA0001	No	39340	GAMMA-BHC(LINDANE),WHOLE WATER,UG/L	07/09/85-08/02/93	8	3	
MANA0007	No	39340	GAMMA-BHC(LINDANE),WHOLE WATER,UG/L	08/02/93-08/02/93	0	1	
MANA0037	No	39340	GAMMA-BHC(LINDANE),WHOLE WATER,UG/L	08/02/93-08/02/93	0	1	
MANA0038	No	39340	GAMMA-BHC(LINDANE),WHOLE WATER,UG/L	08/02/93-08/02/93	0	1	
MANA0036	No	39341	GAMMA-BHC(LINDANE),DISSOLVED,UG/L	08/24/94-08/24/94	0	1	
MANA0009	No	39343	GAMMA-BHC(LINDANE),SEDIMENTS,DRY WGT,UG/KG	08/30/77-08/30/77	0	1	
MANA0001	No	39350	CHLORDANE(TECH MIX & METABS),WHOLE WATER,UG/L	09/10/79-08/06/81	1	3	
MANA0001	No	39351	CHLORDANE(TECH MIX&METABS),SEDIMENTS,DRY WGT,UG/KG	06/12/84-06/16/95	11	6	
MANA0007	No	39351	CHLORDANE(TECH MIX&METABS),SEDIMENTS,DRY WGT,UG/KG	10/16/91-10/16/91	0	1	
MANA0009	No	39351	CHLORDANE(TECH MIX&METABS),SEDIMENTS,DRY WGT,UG/KG	08/30/77-08/30/77	0	1	
MANA0037	No	39351	CHLORDANE(TECH MIX&METABS),SEDIMENTS,DRY WGT,UG/KG	10/16/91-04/17/95	3	2	
MANA0038	No	39351	CHLORDANE(TECH MIX&METABS),SEDIMENTS,DRY WGT,UG/KG	07/21/92-04/17/95	2	2	
MANA0001	No	39363	DDD IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	06/12/84-06/16/95	11	6	
MANA0007	No	39363	DDD IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-10/16/91	0	1	
MANA0009	No	39363	DDD IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	08/30/77-08/30/77	0	1	
MANA0037	No	39363	DDD IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-04/17/95	3	2	
MANA0038	No	39363	DDD IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	07/21/92-04/17/95	2	2	
MANA0001	No	39368	DDE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	06/12/84-06/16/95	11	6	
MANA0007	No	39368	DDE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-10/16/91	0	1	
MANA0009	No	39368	DDE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	08/30/77-08/30/77	0	1	
MANA0037	No	39368	DDE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-04/17/95	3	2	
MANA0038	No	39368	DDE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	07/21/92-04/17/95	2	2	
MANA0001	No	39373	DDT IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	06/12/84-06/16/95	11	6	
MANA0007	No	39373	DDT IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-10/16/91	0	1	
MANA0009	No	39373	DDT IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	08/30/77-08/30/77	0	1	
MANA0037	No	39373	DDT IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-04/17/95	3	2	
MANA0038	No	39373	DDT IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	07/21/92-04/17/95	2	2	
MANA0001	No	39380	DIELDRIN IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	13	6	
MANA0007	No	39380	DIELDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39380	DIELDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39380	DIELDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0036	No	39381	DIELDRIN IN FILT. FRAC. OF WATER SAMPLE (UG/L)	08/24/94-08/24/94	0	1	
MANA0001	No	39383	DIELDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	06/12/84-06/16/95	11	6	
MANA0007	No	39383	DIELDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	10/16/91-10/16/91	0	1	
MANA0009	No	39383	DIELDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	08/30/77-08/30/77	0	1	
MANA0037	No	39383	DIELDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	10/16/91-04/17/95	3	2	
MANA0038	No	39383	DIELDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	07/21/92-04/17/95	2	2	
MANA0001	No	39390	ENDRIN IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	13	6	
MANA0007	No	39390	ENDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39390	ENDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39390	ENDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0001	No	39393	ENDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	06/12/84-06/16/95	11	6	
MANA0007	No	39393	ENDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-10/16/91	0	1	
MANA0009	No	39393	ENDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	08/30/77-08/30/77	0	1	
MANA0037	No	39393	ENDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-04/17/95	3	2	
MANA0038	No	39393	ENDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	07/21/92-04/17/95	2	2	
MANA0001	No	39400	TOXAPHENE IN WHOLE WATER SAMPLE (UG/L)	07/09/85-08/02/93	8	3	
MANA0007	No	39400	TOXAPHENE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39400	TOXAPHENE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39400	TOXAPHENE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0001	No	39403	TOXAPHENE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	06/12/84-06/16/95	11	6	
MANA0007	No	39403	TOXAPHENE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	10/16/91-10/16/91	0	1	
MANA0009	No	39403	TOXAPHENE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	08/30/77-08/30/77	0	1	
MANA0037	No	39403	TOXAPHENE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	10/16/91-04/17/95	3	2	
MANA0038	No	39403	TOXAPHENE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	07/21/92-04/17/95	2	2	
MANA0001	No	39404	DIELDRIN IN TISSUE WET WGT (UG/G)	06/30/87-07/12/90	3	6	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

# Station/Parameter Period of Record Tabulation From 11/19/52 To 07/17/96

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0001	No	39410	HEPTACHLOR IN WHOLE WATER SAMPLE (UG/L)	07/09/85-08/02/93	8	3	
MANA0007	No	39410	HEPTACHLOR IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39410	HEPTACHLOR IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39410	HEPTACHLOR IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0001	No	39413	HEPTACHLOR IN BOT. DEP. (UG/KILOGRAM DRY SOLIDS)	06/12/84-06/16/95	11	6	
MANA0007	No	39413	HEPTACHLOR IN BOT. DEP. (UG/KILOGRAM DRY SOLIDS)	10/16/91-10/16/91	0	1	
MANA0009	No	39413	HEPTACHLOR IN BOT. DEP. (UG/KILOGRAM DRY SOLIDS)	08/30/77-08/30/77	0	1	
MANA0037	No	39413	HEPTACHLOR IN BOT. DEP. (UG/KILOGRAM DRY SOLIDS)	10/16/91-04/17/95	3	2	
MANA0038	No	39413	HEPTACHLOR IN BOT. DEP. (UG/KILOGRAM DRY SOLIDS)	07/21/92-04/17/95	2	2	
MANA0036	No	39415	METOLACHLOR, WATER, DISSOLVED UG/L	08/24/94-08/24/94	0	1	
MANA0001	No	39420	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	07/09/85-08/02/93	8	3	
MANA0007	No	39420	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39420	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39420	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0009	No	39423	HEPTACHLOR EPOXIDE IN BOT. DEP. (UG/KG DRY SOL.)	08/30/77-08/30/77	0	1	
MANA0001	No	39480	METHOXYCHLOR IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/06/81	1	3	
MANA0001	No	39488	PCB - 1221 IN THE WHOLE WATER SAMPLE UG/L	07/09/85-08/02/93	8	3	
MANA0007	No	39488	PCB - 1221 IN THE WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0037	No	39488	PCB - 1221 IN THE WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0038	No	39488	PCB - 1221 IN THE WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0001	No	39492	PCB - 1232 PCB SERIES WHOLE WATER SAMPLE UG/L	07/09/85-08/02/93	8	3	
MANA0007	No	39492	PCB - 1232 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0037	No	39492	PCB - 1232 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0038	No	39492	PCB - 1232 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0001	No	39496	PCB - 1242 PCB SERIES WHOLE WATER SAMPLE UG/L	07/09/85-08/02/93	8	3	
MANA0007	No	39496	PCB - 1242 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0037	No	39496	PCB - 1242 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0038	No	39496	PCB - 1242 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0001	No	39500	PCB - 1248 PCB SERIES WHOLE WATER SAMPLE UG/L	07/09/85-08/02/93	8	3	
MANA0007	No	39500	PCB - 1248 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0037	No	39500	PCB - 1248 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0038	No	39500	PCB - 1248 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0001	No	39508	PCB - 1260 PCB SERIES WHOLE WATER SAMPLE UG/L	07/09/85-08/02/93	8	3	
MANA0007	No	39508	PCB - 1260 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0037	No	39508	PCB - 1260 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0038	No	39508	PCB - 1260 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	0	1	
MANA0001	No	39515	PCBS (MG/KG) FISH TISSUE MG/KG	06/30/87-07/12/90	3	6	
MANA0001	No	39516	PCBS IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	13	4	
MANA0007	No	39516	PCBS IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39516	PCBS IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39516	PCBS IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0009	No	39519	PCBS IN BOTTOM DEPOSITS (UG/KG DRY SOLIDS)	08/30/77-08/30/77	0	1	
MANA0001	No	39526	PCBS TOTAL,IN SEDIMENT,DRY (ISOMER ANALYSES) UG/KG	06/12/84-06/16/95	11	6	
MANA0007	No	39526	PCBS TOTAL,IN SEDIMENT,DRY (ISOMER ANALYSES) UG/KG	10/16/91-10/16/91	0	1	
MANA0037	No	39526	PCBS TOTAL,IN SEDIMENT,DRY (ISOMER ANALYSES) UG/KG	10/16/91-04/17/95	3	2	
MANA0038	No	39526	PCBS TOTAL,IN SEDIMENT,DRY (ISOMER ANALYSES) UG/KG	07/21/92-04/17/95	2	2	
MANA0036	No	39532	MALATHION IN FILT. FRAC. OF WATER SAMPLE (UG/L)	08/24/94-08/24/94	0	1	
MANA0036	No	39542	PARATHION IN FILT. FRAC. OF WATER SAMPLE (UG/L)	08/24/94-08/24/94	0	1	
MANA0036	No	39572	DIAZINON IN FILT. FRAC. OF WATER SAMPLE (UG/L)	08/24/94-08/24/94	0	1	
MANA0001	No	39630	ATRAZINE(AATREX) IN WHOLE WATER SAMPLE (UG/L)	05/10/82-07/10/84	2	3	
MANA0001	No	39631	ATRAZINE IN BOTTOM DEPOS (UG/KG DRY SOLIDS)	04/16/81-05/04/83	2	3	
MANA0036	No	39632	ATRAZINE DISSOLVED IN WATER PPB	08/24/94-08/24/94	0	1	
MANA0001	No	39700	HEXACHLOROBENZENE IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/06/81	1	3	
MANA0001	No	39730	2,4-D IN WHOLE WATER SAMPLE (UG/L)	07/09/85-08/02/93	8	3	
MANA0007	No	39730	2,4-D IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39730	2,4-D IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39730	2,4-D IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0001	No	39740	2,4,5-T IN WHOLE WATER SAMPLE (UG/L)	07/09/85-08/02/93	8	3	
MANA0007	No	39740	2,4,5-T IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39740	2,4,5-T IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39740	2,4,5-T IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0001	No	39760	SILVEX IN WHOLE WATER SAMPLE (UG/L)	07/09/85-08/02/93	8	3	
MANA0007	No	39760	SILVEX IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0037	No	39760	SILVEX IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0038	No	39760	SILVEX IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	0	1	
MANA0001	No	39785	GAMMA-BHC(LINDANE),TISSUE,WET WEIGHT,MG/KG	06/30/87-07/12/90	3	6	
MANA0001	No	45651	PCB - 1262, TISSUE, WET WEIGHT MG/KG	07/12/90-07/12/90	0	3	
MANA0036	No	46342	ALACHLOR (LASSO), WATER, DISSOLVED UG/L	08/24/94-08/24/94	0	1	
MANA0001	No	46570	HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	04/15/93-07/28/94	1	2	
MANA0007	No	46570	HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	04/29/93-08/24/94	1	2	
MANA0037	No	46570	HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	04/29/93-08/24/94	1	2	
MANA0038	No	46570	HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	04/29/93-08/24/94	1	2	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot



# **Station/Parameter Period of Record Tabulation** **From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0041	No	46570	HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	08/02/94-08/02/94	0	1	
MANA0050	No	46570	HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	08/02/94-08/02/94	0	1	
MANA0001	No	50060	CHLORINE, TOTAL RESIDUAL (MG/L)	04/18/78-06/17/86	8	37	
MANA0003	No	50060	CHLORINE, TOTAL RESIDUAL (MG/L)	03/31/75-06/26/79	4	11	
MANA0006	No	50060	CHLORINE, TOTAL RESIDUAL (MG/L)	12/15/75-06/30/78	2	5	
MANA0007	No	50060	CHLORINE, TOTAL RESIDUAL (MG/L)	02/19/75-06/26/79	4	31	
MANA0016	No	50060	CHLORINE, TOTAL RESIDUAL (MG/L)	11/19/74-05/09/79	4	14	
MANA0038	No	50060	CHLORINE, TOTAL RESIDUAL (MG/L)	12/27/76-12/27/76	0	1	
MANA0002	No	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/30/77-08/30/77	0	1	
MANA0004	No	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/30/79-08/30/79	0	1	
MANA0005	No	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	11/19/52-08/30/79	26	4	
MANA0009	No	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/30/77-08/30/77	0	1	
MANA0018	No	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/30/79-08/30/79	0	1	
MANA0023	Yes	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	06/24/80-06/24/80	0	1	
MANA0026	No	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	05/15/69-08/28/79	10	2	
MANA0029	Yes	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	03/25/75-03/25/75	0	1	
MANA0031	No	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	03/14/68-05/15/69	1	7	
MANA0036	No	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/29/79-08/24/94	14	2	
MANA0039	No	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/28/79-08/28/79	0	1	
MANA0040	No	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/28/79-08/28/79	0	1	
MANA0049	No	70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/28/79-08/28/79	0	1	
MANA0002	No	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/30/77-08/30/77	0	1	
MANA0004	No	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/30/79-08/30/79	0	1	
MANA0005	No	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	03/06/68-08/30/79	11	3	
MANA0009	No	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/30/77-08/30/77	0	1	
MANA0018	No	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/30/79-08/30/79	0	1	
MANA0023	Yes	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	06/24/80-06/24/80	0	1	
MANA0026	No	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	05/15/69-08/28/79	10	2	
MANA0029	Yes	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	03/25/75-03/25/75	0	1	
MANA0031	No	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	03/14/68-05/15/69	1	7	
MANA0036	No	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/29/79-08/29/79	0	1	
MANA0039	No	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/28/79-08/28/79	0	1	
MANA0040	No	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/28/79-08/28/79	0	1	
MANA0049	No	70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/28/79-08/28/79	0	1	
MANA0002	No	70302	SOLIDS, DISSOLVED-TONS PER DAY	08/30/77-08/30/77	0	1	
MANA0005	No	70302	SOLIDS, DISSOLVED-TONS PER DAY	03/06/68-04/07/69	1	2	
MANA0009	No	70302	SOLIDS, DISSOLVED-TONS PER DAY	08/30/77-08/30/77	0	1	
MANA0026	No	70302	SOLIDS, DISSOLVED-TONS PER DAY	05/15/69-05/15/69	0	1	
MANA0031	No	70302	SOLIDS, DISSOLVED-TONS PER DAY	03/14/68-11/26/68	0	6	
MANA0002	No	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/30/77-08/30/77	0	1	
MANA0004	No	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/30/79-08/30/79	0	1	
MANA0005	No	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	03/06/68-08/30/79	11	3	
MANA0009	No	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/30/77-08/30/77	0	1	
MANA0018	No	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/30/79-08/30/79	0	1	
MANA0023	Yes	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	06/24/80-06/24/80	0	1	
MANA0026	No	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	05/15/69-08/28/79	10	2	
MANA0029	Yes	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	03/25/75-03/25/75	0	1	
MANA0031	No	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	03/14/68-05/15/69	1	7	
MANA0036	No	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/29/79-08/29/79	0	1	
MANA0039	No	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/28/79-08/28/79	0	1	
MANA0040	No	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/28/79-08/28/79	0	1	
MANA0049	No	70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/28/79-08/28/79	0	1	
MANA0001	No	70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	04/18/78-06/26/79	1	14	
MANA0003	No	70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	10/07/74-06/26/79	4	40	
MANA0006	No	70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	08/05/71-05/09/79	7	60	
MANA0007	No	70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	10/07/74-06/26/79	4	51	
MANA0016	No	70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	11/19/74-05/09/79	4	23	
MANA0037	No	70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	04/19/76-06/26/79	3	15	
MANA0038	No	70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	04/19/76-06/26/79	3	18	
MANA0001	No	70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	04/18/78-07/17/96	18	49	S
MANA0003	No	70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-06/26/79	4	40	
MANA0006	No	70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	08/05/71-05/09/79	7	59	
MANA0007	No	70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	21	66	T,S
MANA0016	No	70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	11/19/74-05/09/79	4	23	
MANA0037	No	70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	04/19/76-07/15/96	20	32	
MANA0038	No	70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	04/19/76-07/15/96	20	35	
MANA0041	No	70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	08/02/94-08/02/94	0	1	
MANA0050	No	70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	08/02/94-08/02/94	0	1	
MANA0005	No	71846	NITROGEN, AMMONIA, DISSOLVED (MG/L AS NH4)	06/17/74-08/27/74	0	11	
MANA0013	No	71846	NITROGEN, AMMONIA, DISSOLVED (MG/L AS NH4)	09/04/73-12/30/74	1	70	
MANA0036	No	71846	NITROGEN, AMMONIA, DISSOLVED (MG/L AS NH4)	09/04/73-12/30/74	1	67	
MANA0002	No	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/30/77-08/30/77	0	1	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0004	No	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/30/79-08/30/79	0	1	
MANA0005	No	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	11/19/52-08/30/79	26	16	S
MANA0009	No	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/30/77-08/30/77	0	1	
MANA0013	No	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	09/04/73-12/30/74	1	71	
MANA0018	No	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/30/79-08/30/79	0	1	
MANA0023	Yes	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	06/24/80-06/24/80	0	1	
MANA0026	No	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	05/15/69-08/28/79	10	2	
MANA0029	Yes	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	03/25/75-03/25/75	0	1	
MANA0031	No	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	03/14/68-05/15/69	1	7	
MANA0036	No	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	09/04/73-08/29/79	5	68	
MANA0039	No	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/28/79-08/28/79	0	1	
MANA0040	No	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/28/79-08/28/79	0	1	
MANA0049	No	71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/28/79-08/28/79	0	1	
MANA0002	No	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/30/77-08/30/77	0	1	
MANA0004	No	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/30/79-08/30/79	0	1	
MANA0005	No	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	06/17/74-08/30/79	5	13	
MANA0009	No	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/30/77-08/30/77	0	1	
MANA0013	No	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	09/04/73-12/30/74	1	71	
MANA0018	No	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/30/79-08/30/79	0	1	
MANA0023	Yes	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	06/24/80-06/24/80	0	1	
MANA0026	No	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/28/79-08/28/79	0	1	
MANA0029	Yes	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	03/25/75-03/25/75	0	1	
MANA0036	No	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	09/04/73-08/29/79	5	69	
MANA0039	No	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/28/79-08/28/79	0	1	
MANA0040	No	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/28/79-08/28/79	0	1	
MANA0049	No	71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/28/79-08/28/79	0	1	
MANA0005	No	71885	IRON (UG/L AS FE)	11/19/52-11/19/52	0	1	
MANA0005	No	71890	MERCURY, DISSOLVED (UG/L AS HG)	08/30/79-08/30/79	0	1	
MANA0029	Yes	71890	MERCURY, DISSOLVED (UG/L AS HG)	03/25/75-03/25/75	0	1	
MANA0049	No	71890	MERCURY, DISSOLVED (UG/L AS HG)	08/28/79-08/28/79	0	1	
MANA0001	No	71900	MERCURY, TOTAL (UG/L AS HG)	04/18/78-07/28/94	16	13	
MANA0003	No	71900	MERCURY, TOTAL (UG/L AS HG)	09/30/75-04/19/79	3	6	
MANA0006	No	71900	MERCURY, TOTAL (UG/L AS HG)	08/05/71-03/27/79	7	14	
MANA0007	No	71900	MERCURY, TOTAL (UG/L AS HG)	10/07/74-08/24/94	19	10	
MANA0015	No	71900	MERCURY, TOTAL (UG/L AS HG)	04/18/83-04/18/83	0	1	
MANA0016	No	71900	MERCURY, TOTAL (UG/L AS HG)	05/01/75-03/15/77	1	2	
MANA0037	No	71900	MERCURY, TOTAL (UG/L AS HG)	04/28/77-08/24/94	17	7	
MANA0038	No	71900	MERCURY, TOTAL (UG/L AS HG)	04/28/77-08/24/94	17	6	
MANA0041	No	71900	MERCURY, TOTAL (UG/L AS HG)	08/02/94-08/02/94	0	1	
MANA0050	No	71900	MERCURY, TOTAL (UG/L AS HG)	08/02/94-08/02/94	0	1	
MANA0001	No	71921	MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	04/16/81-06/16/95	14	9	
MANA0007	No	71921	MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	10/16/91-10/16/91	0	1	
MANA0009	No	71921	MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	08/30/77-08/30/77	0	1	
MANA0037	No	71921	MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	10/16/91-04/17/95	3	2	
MANA0038	No	71921	MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	07/17/91-04/17/95	3	3	
MANA0041	No	71921	MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	08/02/94-08/02/94	0	1	
MANA0050	No	71921	MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	08/02/94-08/02/94	0	1	
MANA0001	No	71930	MERCURY,TOTAL IN FISH OR ANIMAL-WET WEIGHT BASIS	06/30/87-07/12/90	3	6	
MANA0001	No	71936	LEAD,TOTAL IN FISH OR ANIMALS-WET WEIGHT BASIS	06/30/87-07/12/90	3	6	
MANA0001	No	71937	COPPER,TOTAL IN FISH OR ANIMALS-WET WEIGHT BASIS	06/30/87-07/12/90	3	6	
MANA0001	No	71938	ZINC,TOTAL IN FISH OR ANIMALS-WET WEIGHT BASIS	06/30/87-07/12/90	3	6	
MANA0001	No	71939	CHROMIUM,TOT IN FISH OR ANIMALS-WET WEIGHT BASIS	06/30/87-07/12/90	3	6	
MANA0001	No	71940	CADMIUM,TOTAL IN FISH OR ANIMAL-WET WEIGHT BASIS	06/30/87-07/12/90	3	6	
MANA0001	No	75045	HEPTACHLOR EPOXIDE SEDIMENT,DRY,WT,UG/KG	07/12/90-06/16/95	4	3	
MANA0037	No	75045	HEPTACHLOR EPOXIDE SEDIMENT,DRY,WT,UG/KG	04/17/95-04/17/95	0	1	
MANA0038	No	75045	HEPTACHLOR EPOXIDE SEDIMENT,DRY,WT,UG/KG	07/21/92-04/17/95	2	2	
MANA0001	No	77825	ALACHLOR WHOLE WATER,UG/L	07/09/85-08/02/93	8	3	
MANA0007	No	77825	ALACHLOR WHOLE WATER,UG/L	08/02/93-08/02/93	0	1	
MANA0037	No	77825	ALACHLOR WHOLE WATER,UG/L	08/02/93-08/02/93	0	1	
MANA0038	No	77825	ALACHLOR WHOLE WATER,UG/L	08/02/93-08/02/93	0	1	
MANA0001	No	79038	BUTYLBENZYL PHTHALATE TISWETWTMG/KG	07/12/90-07/12/90	0	1	
MANA0001	No	79040	DIBENZ(A,H)ANTHRACENE TISWETWTMG/KG	07/12/90-07/12/90	0	1	
MANA0001	No	79799	DICOFOL (KELTHANE) SEDIMENT,DRY,WT,UG/KG	07/12/90-06/16/95	4	3	
MANA0037	No	79799	DICOFOL (KELTHANE) SEDIMENT,DRY,WT,UG/KG	04/17/95-04/17/95	0	1	
MANA0038	No	79799	DICOFOL (KELTHANE) SEDIMENT,DRY,WT,UG/KG	07/21/92-04/17/95	2	2	
MANA0036	No	80154	SUSP. SEDIMENT CONCENTRATION-EVAP. AT 110C (MG/L)	08/24/94-08/24/94	0	1	
MANA0001	No	81614	NUMBER OF INDIVIDUALS IN THE SAMPLE	06/30/87-07/12/90	3	5	
MANA0001	No	81644	METHOXYCHLOR IN FISH TISSUE,UG/G WET WEIGHT	06/30/87-07/12/90	3	6	
MANA0001	No	81645	MIREX IN FISH TISSUE WET WEIGHT UG/G	07/12/90-07/12/90	0	3	
MANA0001	No	81742	SILVER IN FISH TISSUE WET WEIGHT (MG/KG)PPM	06/30/87-07/12/90	3	6	
MANA0001	No	81823	PENTACHLOROANISOLE(PCA)INFISH TISSUE WET WGT MG/KG	06/30/87-07/12/90	3	6	
MANA0001	No	81896	DDE TOTAL IN TISSUE WET WEIGHT MG/KG	06/30/87-07/12/90	3	6	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot

**Station/Parameter Period of Record Tabulation  
From 11/19/52 To 07/17/96**

Station	In Park	Code	Name	Start - End	Years	Obs	Plots <sup>1</sup>
MANA0001	No	81897	DDD TOTAL IN TISSUE WET WEIGHT MG/KG	06/30/87-07/12/90	3	6	
MANA0001	No	82029	OXYCHLORDANE IN TISSUE SAMPLE WET WEIGHT MG/KG	07/12/90-07/12/90	0	3	
MANA0041	No	82033	MAGNESIUM - TOTAL UG/L(AS MG)	08/02/94-08/02/94	0	1	
MANA0050	No	82033	MAGNESIUM - TOTAL UG/L(AS MG)	08/02/94-08/02/94	0	1	
MANA0001	No	82078	TURBIDITY, FIELD NEPHELOMETRIC TURBIDITY UNITS, NTU	06/04/92-06/20/94	2	18	
MANA0007	No	82078	TURBIDITY, FIELD NEPHELOMETRIC TURBIDITY UNITS, NTU	07/21/92-04/20/94	1	8	
MANA0037	No	82078	TURBIDITY, FIELD NEPHELOMETRIC TURBIDITY UNITS, NTU	07/21/92-04/20/94	1	8	
MANA0038	No	82078	TURBIDITY, FIELD NEPHELOMETRIC TURBIDITY UNITS, NTU	07/21/92-04/20/94	1	8	
MANA0017	Yes	82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	11	129	A
MANA0020	Yes	82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	03/14/87-11/13/94	7	87	
MANA0021	Yes	82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	11	106	A
MANA0022	Yes	82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	11	143	A
MANA0024	Yes	82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	11	130	A
MANA0027	Yes	82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-03/28/85	2	35	
MANA0028	Yes	82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	11	131	A
MANA0030	Yes	82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	11	144	A
MANA0032	Yes	82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	01/23/92-11/13/94	2	51	
MANA0033	Yes	82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	01/23/92-11/13/94	2	52	
MANA0034	Yes	82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	01/23/92-11/13/94	2	50	
MANA0036	No	82630	METRIBUZIN (SENCOR), WATER, DISSOLVED UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82660	DIETHYLANILINE, 2, 6-, 0.7UM FILT, TOT RECV, WTR UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82661	TRIFLURALINE, 0.7UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82662	DIMETHOATE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82663	ETHALFLURALIN, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82664	PHORATE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82665	TERBACIL, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82666	LINURON, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82667	METHYL PARATHION, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82668	EPTC, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82669	PEBULATE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82670	TEBUTHIURON, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82671	MOLINATE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82672	ETHOPROP, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82673	BENFLURALIN, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82674	CARBOFURAN, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82675	TERBUFOS, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82676	PRONAMIDE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82677	DISULFOTON, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82678	TRIALATE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82679	PROPANIL, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82680	CARBARYL, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82681	THIOBENCARB, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82682	DCPA, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82683	PENDIMETHALIN, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82684	NAPROPAMIDE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82685	PROPARGITE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82686	METHYL AZINPHOS, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0036	No	82687	PERMETHRIN, CIS, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	0	1	
MANA0001	No	84007	ANATOMY ALPHA CODE	06/30/87-07/12/90	3	6	
MANA0017	Yes	85663	FLOW, RATE FT/SEC	01/23/92-11/13/94	2	52	
MANA0020	Yes	85663	FLOW, RATE FT/SEC	01/23/92-11/13/94	2	52	
MANA0021	Yes	85663	FLOW, RATE FT/SEC	01/23/92-11/13/94	2	52	
MANA0022	Yes	85663	FLOW, RATE FT/SEC	01/23/92-11/13/94	2	52	
MANA0024	Yes	85663	FLOW, RATE FT/SEC	01/23/92-11/13/94	2	52	
MANA0028	Yes	85663	FLOW, RATE FT/SEC	01/23/92-11/13/94	2	52	
MANA0030	Yes	85663	FLOW, RATE FT/SEC	01/23/92-11/13/94	2	52	
MANA0032	Yes	85663	FLOW, RATE FT/SEC	01/23/92-11/13/94	2	51	
MANA0033	Yes	85663	FLOW, RATE FT/SEC	01/23/92-11/13/94	2	52	
MANA0034	Yes	85663	FLOW, RATE FT/SEC	01/23/92-11/13/94	2	50	

<sup>1</sup>T=Times Series Plot, A=Annual Plot, and S=Seasonal Plot



## **Station-By-Station Results**



## Station Inventory for Station: MANA0001

NPS Station ID: MANA0001 Location: RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY Station Type: /TYPA/AMBNT/STREAM RMI-Indexes: 0214001 002190 00800 RMI-Miles: 0087.39 0016.91 010.28 HUC: 02070010 Major Basin: 02-NORTH-ATLANTIC Minor Basin: 1-POTOMAC-SHENANDOAH RF1 Index: 02070010052 RF3 Index: 02070010005510.60 Description: VIRGINIA STATE WATER CONTROL BOARD RIVER: BULL RUN	LAT/LON: 38.803059/ -77.449726  Depth of Water: 0 Elevation: 0  RF1 Mile Point: 4.880 RF3 Mile Point: 10.73  AMBIENT MONITORING TOPO MAP #: 0028	Agency: 21VASWCB FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM STORET Station ID(s): 1ABUL010.28 /VA1A07AX0140 Within Park Boundary: No  Aquifer: Water Body Id: ECO Region: Distance from RF1: 6.30 Distance from RF3: 0.19  REGION: 3 NORTHERN VIRGINIA TOPO MAP NAME: MANASSAS, VA
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On/Off RF1: OFF  
On/Off RF3:

### Parameter Inventory for Station: MANA0001

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	182	14.65	14.76	32.	0.	70.317	8.386	2.91	7.075	22.1	25.
00023 SAMPLE WEIGHT IN POUNDS	06/30/87-07/12/90	6	0.14	0.147	0.23	0.07	0.005	0.069	**	**	**	**
00024 SAMPLE LENGTH IN INCHES	06/30/87-07/12/90	6	5.05	5.913	8.33	4.9	2.235	1.495	**	**	**	**
00061 FLOW, STREAM, INSTANTANEOUS CFS	08/02/83-08/02/83	1	1.	1.	1.	1.	0.	0.	**	**	**	**
00070 TURBIDITY, (JACKSON CANDLE UNITS)	09/15/88-05/05/92	40	6.05	12.133	85.	1.1	300.758	17.342	1.6	2.725	14.25	26.3
00076 TURBIDITY,HACH TURBIDIMETER (FORMAZIN TURB UNIT)	07/28/94-06/05/96	16	11.6	15.881	64.	3.4	227.67	15.089	3.82	5.	22.75	36.
00080 COLOR (PLATINUM-COBALT UNITS)	02/05/91-12/15/92	19	46.	63.263	154.	13.	2001.76	44.741	19.	24.	99.	137.
00094p SPECIFIC CONDUCTANCE,FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	145	355.	415.51	3370.	21.	106718.21	326.678	150.2	245.5	524.	702.8
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	60	328.5	398.167	2840.	90.	130922.345	361.832	157.1	239.5	458.75	648.4
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/04/91-07/17/96	38	9.55	9.795	14.7	6.5	4.551	2.133	6.7	8.25	11.325	12.75
00300p OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	144	9.75	9.942	14.6	0.5	5.485	2.342	7.4	8.1	11.675	13.15
00310p BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	181	2.	1.826	6.	0.5	0.918	0.958	1.	1.	2.	3.
00340p COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	170	13.	14.774	43.	0.	55.595	7.456	7.	10.	18.	25.
00400p PH (STANDARD UNITS)	04/18/78-07/17/96	173	7.5	7.51	9.	6.2	0.255	0.505	6.8	7.2	7.8	8.1
00400p CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	173	7.5	7.231	9.	6.2	0.333	0.577	6.8	7.2	7.8	8.1
00400p MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	173	0.032	0.059	0.631	0.001	0.007	0.086	0.008	0.016	0.063	0.158
00403p PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	99	7.4	7.412	8.2	6.6	0.125	0.353	7.	7.2	7.6	7.9
00403p CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	99	7.4	7.273	8.2	6.6	0.144	0.38	7.	7.2	7.6	7.9
00403p MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	99	0.04	0.053	0.251	0.006	0.002	0.047	0.013	0.025	0.063	0.1
00410p ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	99	55.	58.455	141.	18.	381.761	19.539	36.	45.	70.	84.
00500p RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	90	221.	245.211	640.	87.	10815.27	103.996	127.6	176.5	291.	410.9
00505p RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	91	53.	59.956	300.	18.	1613.42	40.167	28.	39.	65.	92.6
00510p RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	91	160.	188.879	450.	62.	7154.33	84.583	90.8	136.	232.	325.2
00530p RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	183	6.	16.56	352.	0.5	1407.543	37.517	2.2	2.5	13.	39.
00535p RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	183	2.5	3.74	46.	0.	20.376	4.514	1.	1.5	4.	7.
00540p RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	184	3.	13.364	306.	0.	1100.367	33.172	1.	2.	11.	33.
00610p NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	183 ##	0.05	0.116	1.4	0.005	0.05	0.224	0.02	0.04	0.08	0.2
00615p NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	183	0.02	0.04	0.55	0.005	0.005	0.07	0.005	0.01	0.04	0.08
00620p NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	170	3.125	4.958	20.9	0.01	24.209	4.92	0.49	1.3	7.183	12.9
00625p NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	181	0.5	0.587	2.7	0.05	0.151	0.389	0.2	0.3	0.7	1.
00630 NITRITE PLUS NITRATE, TOTAL I DET. (MG/L AS N)	04/18/78-06/26/79	14	2.1	3.423	13.6	0.7	13.046	3.612	0.75	0.9	4.35	10.8
00665p PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	169 ##	0.05	0.085	0.3	0.05	0.003	0.057	0.05	0.05	0.1	0.2
00671p PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	133	0.02	0.033	0.23	0.005	0.002	0.045	0.005	0.01	0.03	0.096

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

# Parameter Inventory for Station: MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	172	5.95	6.327	29.	0.5	11.773	3.431	3.16	4.	7.3	9.76
00900	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	91	108.	111.33	260.	31.	1938.046	44.023	62.	78.	144.	174.4
00940p	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	73	32.	36.068	168.	0.	740.426	27.211	8.	14.5	48.5	70.2
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	70	34.	43.129	173.	0.	771.476	27.775	14.2	24.	57.25	75.9
00951	FLUORIDE, TOTAL (MG/L AS F)	11/15/88-04/15/93	43	0.25	0.262	0.86	0.05	0.033	0.181	0.05	0.13	0.36	0.562
00955	SILICA, DISSOLVED (MG/L AS SiO2)	05/09/89-01/14/93	42	9.75	9.486	16.9	4.2	10.797	3.286	4.76	6.975	11.8	13.9
01002	ARSENIC, TOTAL (UG/L AS AS)	04/18/78-07/28/94	14 ##	1.	2.	5.	0.5	3.923	1.981	0.5	0.5	5.	5.
01003	ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	06/02/80-06/16/95	8	6.3	7.594	20.4	3.2	31.32	5.596	**	**	**	**
01004	ARSENIC TOTAL IN FISH OR ANIMAL WET WT MG/KG	06/30/87-07/12/90	6 ##	0.1	0.097	0.1	0.09	0.	0.005	**	**	**	**
01012	BERYLLIUM, TOTAL (UG/L AS BE)	09/15/88-04/15/93	3 ##	2.5	3.333	5.	2.5	2.083	1.443	**	**	**	**
01013	BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	05/04/83-06/16/95	4 ##	1.255	1.228	1.9	0.5	0.39	0.624	**	**	**	**
01027	CADMIUM, TOTAL (UG/L AS CD)	04/18/78-07/28/94	14 ##	3.75	3.179	6.	0.5	4.639	2.154	0.5	0.5	5.	5.5
01028	CADMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	06/02/80-06/16/95	8 ##	0.095	0.179	0.5	0.065	0.025	0.159	**	**	**	**
01029	CHROMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	06/02/80-06/16/95	8	30.05	30.	32.9	25.9	6.14	2.478	**	**	**	**
01034	CHROMIUM, TOTAL (UG/L AS CR)	04/18/78-07/28/94	13 ##	5.	6.154	25.	0.5	41.099	6.411	0.5	2.	7.5	19.
01042	COPPER, TOTAL (UG/L AS CU)	04/18/78-07/28/94	12 ##	5.	8.75	25.	5.	46.023	6.784	5.	5.	10.	23.5
01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	06/02/80-06/16/95	9	15.5	18.844	52.3	0.1	212.8	14.588	0.1	12.	23.75	52.3
01045	IRON, TOTAL (UG/L AS FE)	11/08/78-07/28/94	6	354.	603.667	2014.	100.	497675.867	705.461	**	**	**	**
01051	LEAD, TOTAL (UG/L AS PB)	04/18/78-07/28/94	14 ##	3.75	3.393	7.	1.	4.93	2.22	1.	1.	5.	6.5
01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	06/02/80-06/16/95	8	28.7	37.263	65.7	18.1	396.583	19.914	**	**	**	**
01055	MANGANESE, TOTAL (UG/L AS MN)	11/08/78-07/28/94	5	80.	109.	205.	40.	5505.	74.196	**	**	**	**
01059	THALLIUM, TOTAL (UG/L AS TL)	09/15/88-04/15/93	3 ##	5.	6.667	10.	5.	8.333	2.887	**	**	**	**
01065	NICKEL, DISSOLVED (UG/L AS NI)	04/18/78-04/19/79	3 ##	50.	35.	50.	5.	675.	25.981	**	**	**	**
01067	NICKEL, TOTAL (UG/L AS NI)	10/02/79-07/28/94	10 ##	10.	24.5	100.	5.	924.722	30.409	5.	5.	35.	95.
01068	NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	06/02/80-06/16/95	8	19.9	18.063	27.2	0.5	61.551	7.845	**	**	**	**
01069	NICKEL, TOTAL IN FISH OR ANIMALS-WET WEIGHT MG/KG	06/30/87-07/12/90	6	0.6	0.917	2.	0.1	0.81	0.9	**	**	**	**
01073	THALLIUM, TISSUE, WET WEIGHT, MG/KG	07/12/90-07/12/90	3 ##	0.1	0.1	0.1	0.1	0.	0.	**	**	**	**
01077	SILVER, TOTAL (UG/L AS AG)	09/15/88-09/15/88	2 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
01092	ZINC, TOTAL (UG/L AS ZN)	04/18/78-07/28/94	12 ##	5.	10.	25.	5.	54.545	7.385	5.	5.	17.5	23.5
01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	06/02/80-06/16/95	8	66.2	84.8	217.3	61.4	2876.049	53.629	**	**	**	**
01147	SELENIUM, TOTAL (UG/L AS SE)	09/15/88-07/28/94	4 ##	7.5	7.5	10.	5.	8.333	2.887	**	**	**	**
01148	SELENIUM IN BOTTOM DEPOSITS (MG/KG AS SE DRY WGT)	05/04/83-06/16/95	4	3.8	3.325	5.2	0.5	3.983	1.996	**	**	**	**
01149	SELENIUM, TOTAL IN FISH OR ANIMALS WET WGT MG/KG	07/12/90-07/12/90	3	0.3	0.267	0.3	0.2	0.003	0.058	**	**	**	**
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	146	100.	714.767	8000.	9.	2393509.297	1547.097	50.	50.	400.	2500.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	146	2.	2.263	3.903	0.954	0.424	0.651	1.699	1.699	2.602	3.398
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C				183.068								
32240	TANNIN AND LIGNIN (MG/L)	08/06/92-10/06/92	2	0.4	0.4	0.5	0.3	0.02	0.141	**	**	**	**
34204	ACENAPHTHYLENE WET WGT TISM/G/KG	07/12/90-07/12/90	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34209	ACENAPHTHENE WET WGT TISM/G/KG	07/12/90-07/12/90	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34224	ANTHRACENE WET WGT TISM/G/KG	07/12/90-07/12/90	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34234	BENZO(B)FLUORANTHENE, TISSUE, WET WGT, MG/KG	07/12/90-07/12/90	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34246	BENZO(K)FLUORANTHENE, WET WT, TISSUE MG/KG	07/12/90-07/12/90	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34251	BENZO-A-PYRENE WET WGT TISM/G/KG	07/12/90-07/12/90	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34252	BERYLLIUM WET WGT TISM/G/KG	07/12/90-07/12/90	3 ##	0.1	0.103	0.11	0.1	0.	0.006	**	**	**	**
34258	B-BHC-BETA WET WGT TISM/G/KG	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34259	DELTA BENZENE HEXACHLORIDE TOTWUG/L	07/09/85-08/02/93	3 ##	0.05	0.035	0.05	0.005	0.001	0.026	**	**	**	**
34263	DELTA BENZENE HEXACHLORIDE WET WGT TISM/G/KG	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34324	CHRYSENE WET WGT TISM/G/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34340	DIETHYL PHTHALATE WET WGT TISM/G/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34345	DIMETHYL PHTHALATE WET WGT TISM/G/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34351	ENDOSULFAN SULFATE TOTWUG/L	07/09/85-08/02/93	3 ##	0.05	0.035	0.05	0.005	0.001	0.026	**	**	**	**
34356	ENDOSULFAN, BETA TOTWUG/L	07/09/85-08/02/93	3 ##	0.05	0.035	0.05	0.005	0.001	0.026	**	**	**	**
34360	ENDOSULFAN, BETA WET WGT TISM/G/KG	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34361	ENDOSULFAN, ALPHA TOTWUG/L	07/09/85-08/02/93	3 ##	0.05	0.035	0.05	0.005	0.001	0.026	**	**	**	**
34365	ENDOSULFAN, ALPHA WET WGT TISM/G/KG	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34366	ENDRIN ALDEHYDE TOTWUG/L	07/09/85-08/02/93	3 ##	0.05	0.035	0.05	0.005	0.001	0.026	**	**	**	**
34380	FLUORANTHENE WET WGT TISM/G/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34385	FLUORENE WET WGT TISM/G/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34407	INDENO (1,2,3-CD) PYRENE WET WGT TISM/G/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34437	N-NITROSODIPHENYLAMINE WET WGT TISM/G/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34446	NAPHTHALENE WET WGT TISM/G/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34465	PHENANTHRENE WET WGT TISM/G/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34473	PYRENE WET WGT TISM/G/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot



# Parameter Inventory for Station: MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
34480	THALLIUM DRY WGTBOTMG/KG	05/04/83-06/16/95	3	3.8	4.333	8.7	0.5	17.023	4.126	**	**	**	**
34525	BENZO(GH)PERYLENE1,12-BENZOPERYLENWET WGT TISMG/KG	07/12/90-07/12/90	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34530	BENZO(A)ANTHRACENE1,2-BENZANTHRACENWET WGT TISMG/KG	07/12/90-07/12/90	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34555	1,2,4-TRICHLOROBENZENE WET WGT TISMG/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34585	2-CHLORONAPHTHALENE WET WGT TISMG/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34635	3,3'-DICHLOROBENZIDINE WET WGT TISMG/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34640	4-BROMOPHENYL PHENYL ETHER WET WGT TISMG/KG	07/12/90-07/12/90	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34664	PCB - 1221 WET WGT TISMG/KG	07/12/90-07/12/90	3 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
34667	PCB - 1232 WET WGT TISMG/KG	07/12/90-07/12/90	3 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
34669	PCB - 1248 WET WGT TISMG/KG	07/12/90-07/12/90	3 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
34670	PCB - 1260 WET WGT TISMG/KG	06/30/87-07/12/90	6 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
34671	PCB - 1016 TOTWUG/L	07/09/85-08/02/93	3 ##	0.05	0.117	0.25	0.05	0.013	0.115	**	**	**	**
34674	PCB - 1016 WET WGT TISMG/KG	07/12/90-07/12/90	3 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
34680	ALDRIN IN FISH TISSUE WET WEIGHT MG/KG	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34682	CHLORDANE(TECH MIX & METABS), TISSUE WET WGT, MG/KG	06/30/87-07/12/90	6 ##	0.5	0.425	0.5	0.05	0.034	0.184	**	**	**	**
34685	ENDRIN WET WGT TISMG/KG	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34686	HEPTACHLOR EPOXIDE WET WGT TISMG/KG	06/30/87-07/12/90	5 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34687	HEPTACHLOR WET WGT TISMG/KG	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34688	HEXACHLOROBENZENE WET WGT TISMG/KG	06/30/87-07/12/90	4 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
34689	PCB - 1242 WET WGT TISMG/KG	07/12/90-07/12/90	3 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
34690	PCB - 1254 WET WGT TISMG/KG	06/30/87-07/12/90	6 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
34691	TOXAPHENE WET WGT TISMG/KG	06/30/87-07/12/90	6 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
38442	DICAMBA (BANVEL) WATER, DISSUG/L	07/09/85-07/15/86	2 ##	0.1	0.1	0.1	0.1	0.	0.	**	**	**	**
38451	DICHLORPROP WATER, SUSPUG/L	07/09/85-07/15/86	2 ##	0.1	0.1	0.1	0.1	0.	0.	**	**	**	**
38744	CHLORPYRIFOS-METHYL TISWET WGT MG/KG	07/12/90-07/12/90	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
38745	2,4-DB WATER, TOTUG/L	07/09/85-08/02/93	3 ##	0.1	0.117	0.15	0.1	0.001	0.029	**	**	**	**
39032	PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE UG/L	09/10/79-08/02/93	6 ##	0.025	0.025	0.05	0.	0.001	0.027	**	**	**	**
39061	PCP (PENTACHLOROPHENOL) IN BOT DEPOS DRY SOL UG/KG	06/12/84-06/16/95	4 ##	10.	11.251	25.	0.005	106.213	10.306	**	**	**	**
39062	CHLORDANE-CIS ISOMER, WHOLE WATER SAMPL (UG/L)	09/10/79-08/06/81	3	0.	0.	0.	0.	0.	0.	**	**	**	**
39065	CHLORDANE-TRANS ISOMER, WHOLE WATER SAMPL (UG/L)	09/10/79-08/06/81	3	0.	0.	0.	0.	0.	0.	**	**	**	**
39068	CHLORDANE-NONACHLOR, CIS ISO, WHOLE WTR (UG/L)	09/10/79-08/06/81	3	0.	0.	0.	0.	0.	0.	**	**	**	**
39069	CHLORDANE-NONACHLOR, CIS ISO, TISSUE WET WGT (UG/G)	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39071	CHLORDANE-NONACHLOR, TRANS ISO, WHOLE WTR (UG/L)	09/10/79-08/06/81	3	0.	0.	0.	0.	0.	0.	**	**	**	**
39072	CHLORDANE-NONACHLOR, TRANS ISO, TISSUE, WET WT, UG/G	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39074	BHC-ALPHA ISOMER, TISSUE UG/G WET WGT	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39099	BIS(2-ETHYLHEXYL)PHTHALATE, TISSUE, WET WGT, MG/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39113	DIBUTYL PHTHALATES IN FISH, ANIMAL WET WGT UG/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39290	DDT TOTAL IN TISSUE WET WGT BASIS (UG/G)	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39300	P,P' DDT IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	6 ##	0.003	0.018	0.05	0.	0.001	0.025	**	**	**	**
39305	O,P' DDT IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/06/81	3	0.	0.	0.	0.	0.	0.	**	**	**	**
39310	P,P' DDD IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	6 ##	0.003	0.018	0.05	0.	0.001	0.025	**	**	**	**
39315	O,P' DDD IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/06/81	3	0.	0.	0.	0.	0.	0.	**	**	**	**
39320	P,P' DDE IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	6 ##	0.003	0.018	0.05	0.	0.001	0.025	**	**	**	**
39327	ORTHO PARA DDE IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/06/81	3	0.	0.	0.	0.	0.	0.	**	**	**	**
39330	ALDRIN IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	10	0.	0.021	0.1	0.	0.001	0.035	0.	0.	0.05	0.095
39333	ALDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	04/16/81-06/16/95	3	0.	0.007	0.02	0.	0.	0.012	**	**	**	**
39337	ALPHA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	07/09/85-08/02/93	3 ##	0.05	0.035	0.05	0.005	0.001	0.026	**	**	**	**
39338	BETA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	07/09/85-08/02/93	3 ##	0.05	0.035	0.05	0.005	0.001	0.026	**	**	**	**
39340	GAMMA-BHC(LINDANE), WHOLE WATER, UG/L	07/09/85-08/02/93	3 ##	0.05	0.035	0.05	0.005	0.001	0.026	**	**	**	**
39350	CHLORDANE(TECH MIX & METABS), WHOLE WATER, UG/L	09/10/79-08/06/81	3	0.	0.	0.	0.	0.	0.	**	**	**	**
39351	CHLORDANE(TECH MIX & METABS), SEDIMENTS, DRY WGT, UG/KG	06/12/84-06/16/95	4 ##	750.	625.125	1000.	0.5	228958.396	478.496	**	**	**	**
39363	DDD IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	06/12/84-06/16/95	4 ##	0.05	12.538	50.	0.05	623.751	24.975	**	**	**	**
39368	DDE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	06/12/84-06/16/95	4 ##	0.05	12.538	50.	0.05	623.751	24.975	**	**	**	**
39373	DDT IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	06/12/84-06/16/95	4	100.	75.013	100.	0.05	2497.501	49.975	**	**	**	**
39380	DIELDRIN IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	6 ##	0.003	0.018	0.05	0.	0.001	0.025	**	**	**	**
39383	DIELDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	06/12/84-06/16/95	4 ##	75.	62.513	100.	0.05	2289.584	47.85	**	**	**	**
39390	ENDRIN IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	6 ##	0.013	0.021	0.05	0.	0.001	0.025	**	**	**	**
39393	ENDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	06/12/84-06/16/95	4 ##	0.05	12.538	50.	0.05	623.751	24.975	**	**	**	**
39400	TOXAPHENE IN WHOLE WATER SAMPLE (UG/L)	07/09/85-08/02/93	3 ##	0.05	0.117	0.25	0.05	0.013	0.115	**	**	**	**
39403	TOXAPHENE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	06/12/84-06/16/95	4 ##	750.	625.125	1000.	0.5	228958.396	478.496	**	**	**	**
39404	DIELDRIN IN TISSUE WET WGT (UG/G)	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39410	HEPTACHLOR IN WHOLE WATER SAMPLE (UG/L)	07/09/85-08/02/93	3 ##	0.05	0.035	0.05	0.005	0.001	0.026	**	**	**	**
39413	HEPTACHLOR IN BOT. DEP. (UG/KILOGRAM DRY SOLIDS)	06/12/84-06/16/95	4 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
39420	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	07/09/85-08/02/93	3 ##	0.05	0.035	0.05	0.005	0.001	0.026	**	**	**	**
39480	METHOXYCHLOR IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/06/81	3	0.	0.	0.	0.	0.	0.	**	**	**	**
39488	PCB - 1221 IN THE WHOLE WATER SAMPLE UG/L	07/09/85-08/02/93	3 ##	0.05	0.117	0.25	0.05	0.013	0.115	**	**	**	**
39492	PCB - 1232 PCB SERIES WHOLE WATER SAMPLE UG/L	07/09/85-08/02/93	3 ##	0.05	0.117	0.25	0.05	0.013	0.115	**	**	**	**
39496	PCB - 1242 PCB SERIES WHOLE WATER SAMPLE UG/L	07/09/85-08/02/93	3 ##	0.05	0.117	0.25	0.05	0.013	0.115	**	**	**	**
39500	PCB - 1248 PCB SERIES WHOLE WATER SAMPLE UG/L	07/09/85-08/02/93	3 ##	0.05	0.117	0.25	0.05	0.013	0.115	**	**	**	**
39508	PCB - 1260 PCB SERIES WHOLE WATER SAMPLE UG/L	07/09/85-08/02/93	3 ##	0.05	0.117	0.25	0.05	0.013	0.115	**	**	**	**
39515	PCBS (MG/KG) FISH TISSUE MG/KG	06/30/87-07/12/90	6 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
39516	PCBS IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/02/93	4	0.	0.063	0.25	0.	0.016	0.125	**	**	**	**
39526	PCBS TOTAL,IN SEDIMENT,DRY (ISOMER ANALYSES) UG/KG	06/12/84-06/16/95	4 ##	750.	625.013	1000.	0.05	229145.834	478.692	**	**	**	**
39630	ATRAZINE(AATREX) IN WHOLE WATER SAMPLE (UG/L)	05/10/82-07/10/84	3	0.	0.167	0.5	0.	0.083	0.289	**	**	**	**
39631	ATRAZINE IN BOTTOM DEPOS (UG/KG DRY SOLIDS)	04/16/81-05/04/83	3	0.	0.033	0.1	0.	0.003	0.058	**	**	**	**
39700	HEXACHLOROBENZENE IN WHOLE WATER SAMPLE (UG/L)	09/10/79-08/06/81	3	0.	0.	0.	0.	0.	0.	**	**	**	**
39730	2,4-D IN WHOLE WATER SAMPLE (UG/L)	07/09/85-08/02/93	3 ##	0.1	0.117	0.15	0.1	0.001	0.029	**	**	**	**
39740	2,4,5-T IN WHOLE WATER SAMPLE (UG/L)	07/09/85-08/02/93	3 ##	0.1	0.083	0.1	0.05	0.001	0.029	**	**	**	**
39760	SILVEX IN WHOLE WATER SAMPLE (UG/L)	07/09/85-08/02/93	3 ##	0.1	0.083	0.1	0.05	0.001	0.029	**	**	**	**
39785	GAMMA-BHC(LINDANE),TISSUE,WET WEIGHT,MG/KG	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
45651	PCB - 1262, TISSUE, WET WEIGHT MG/KG	07/12/90-07/12/90	3 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
46570	HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	04/15/93-07/28/94	2	59.5	59.5	81.	38.	924.5	30.406	**	**	**	**
50060	CHLORINE, TOTAL RESIDUAL (MG/L)	04/18/78-06/17/86	37	0.	0.053	0.3	0.	0.007	0.085	0.	0.	0.1	0.2
70505	PHOSPHATE,TOTAL,COLORIMETRIC METHOD (MG/L AS P)	04/18/78-06/26/79	14 ##	0.05	0.136	0.5	0.05	0.019	0.139	0.05	0.05	0.225	0.4
70507	PHOSPHORUS,IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	04/18/78-07/17/96	49	0.02	0.047	0.39	0.005	0.005	0.074	0.005	0.01	0.04	0.08
71900	MERCURY, TOTAL (UG/L AS HG)	04/18/78-07/28/94	13 ##	0.15	0.223	0.5	0.15	0.016	0.125	0.15	0.15	0.325	0.46
71921	MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	04/16/81-06/16/95	7 ##	0.1	0.102	0.25	0.045	0.005	0.069	**	**	**	**
71930	MERCURY,TOTAL IN FISH OR ANIMAL-WET WEIGHT BASIS	06/30/87-07/12/90	6	0.055	0.147	0.43	0.01	0.033	0.183	**	**	**	**
71936	LEAD,TOTAL IN FISH OR ANIMALS-WET WEIGHT BASIS	06/30/87-07/12/90	6 ##	1.	0.833	1.	0.2	0.103	0.32	**	**	**	**
71937	COPPER,TOTAL IN FISH OR ANIMALS-WET WEIGHT BASIS	06/30/87-07/12/90	6	0.65	0.733	1.6	0.1	0.403	0.635	**	**	**	**
71938	ZINC,TOTAL IN FISH OR ANIMALS-WET WEIGHT BASIS	06/30/87-07/12/90	6	9.2	13.683	37.	5.7	141.93	11.913	**	**	**	**
71939	CHROMIUM,TOT IN FISH OR ANIMALS-WET WEIGHT BASIS	06/30/87-07/12/90	6	0.2	1.433	4.9	0.1	4.163	2.04	**	**	**	**
71940	CADMIUM,TOTAL IN FISH OR ANIMAL-WET WEIGHT BASIS	06/30/87-07/12/90	6 ##	0.1	0.083	0.1	0.05	0.001	0.026	**	**	**	**
75045	HEPTACHLOR EPOXIDE SEDIMENT,DRY,WT,UG/KG	07/12/90-06/16/95	1 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
77825	ALACHLOR WHOLE WATER,UG/L	07/09/85-08/02/93	3 ##	0.1	0.068	0.1	0.005	0.003	0.055	**	**	**	**
79038	BUTYLBENZYL PHTHALATE TISWETWTMG/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
79040	DIBENZ(A,H)ANTHRACENE TISWETWTMG/KG	07/12/90-07/12/90	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
79799	DICOFOL (KELTHANE) SEDIMENT,DRY,WT,UG/KG	07/12/90-06/16/95	1 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
81614	NUMBER OF INDIVIDUALS IN THE SAMPLE	06/30/87-07/12/90	5	8.	6.6	10.	3.	11.3	3.362	**	**	**	**
81644	METHOXYCHLOR IN FISH TISSUE,UG/G WET WEIGHT	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
81645	MIREX IN FISH TISSUE WET WEIGHT UG/G	07/12/90-07/12/90	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
81742	SILVER IN FISH TISSUE WET WEIGHT (MG/KG)PPM	06/30/87-07/12/90	6 ##	0.1	0.133	0.3	0.1	0.007	0.082	**	**	**	**
81823	PENTACHLOROANISOLE(PCA)INFISH TISSUE WET WGT MG/KG	06/30/87-07/12/90	6 ##	0.038	0.038	0.05	0.025	0.	0.014	**	**	**	**
81896	DDE TOTAL IN TISSUE WET WEIGHT MG/KG	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
81897	DDD TOTAL IN TISSUE WET WEIGHT MG/KG	06/30/87-07/12/90	6 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
82029	OXYCHLORDANE IN TISSUE SAMPLE WET WEIGHT MG/KG	07/12/90-07/12/90	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
82078	TURBIDITY,FIELD NEPHELOMETRIC TURBIDITY UNITS,NTU	06/04/92-06/20/94	18	11.	14.717	49.	2.	176.486	13.285	2.36	4.575	23.75	35.5

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0001

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00070	TURBIDITY, JACKSON CANDLE UNITS	Other-Hi Lim.	50.	40	2	0.05	21	0	0.00	12	0	0.00	7	2	0.29		
00076	TURBIDITY, HACH TURBIDIMETER	Other-Hi Lim.	50.	16	1	0.06	7	0	0.00	5	0	0.00	4	1	0.25		
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	38	0	0.00	16	0	0.00	14	0	0.00	8	0	0.00		
00300	OXYGEN, DISSOLVED	Other-Lo Lim.	4.	144	1	0.01	66	1	0.02	51	0	0.00	27	0	0.00		
00400	PH	Other-Hi Lim.	9.	173	1	0.01	77	1	0.01	60	0	0.00	36	0	0.00		
		Other-Lo Lim.	6.5	173	5	0.03	77	3	0.04	60	1	0.02	36	1	0.03		
00403	PH, LAB	Other-Hi Lim.	9.	99	0	0.00	44	0	0.00	34	0	0.00	21	0	0.00		
		Other-Lo Lim.	6.5	99	0	0.00	44	0	0.00	34	0	0.00	21	0	0.00		
00615	NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	183	0	0.00	83	0	0.00	66	0	0.00	34	0	0.00		

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

# EPA Water Quality Criteria Analysis for Station: MANA0001

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	170	28	0.16	79	9	0.11	59	6	0.10	32	13	0.41			
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	14	1	0.07	4	1	0.25	8	0	0.00	2	0	0.00			
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	73	0	0.00	37	0	0.00	25	0	0.00	11	0	0.00			
	Drinking Water	250.	73	0	0.00	37	0	0.00	25	0	0.00	11	0	0.00			
00945 SULFATE, TOTAL (AS SO4)	Drinking Water	250.	70	0	0.00	35	0	0.00	24	0	0.00	11	0	0.00			
00951 FLUORIDE, TOTAL AS F	Drinking Water	4.	43	0	0.00	23	0	0.00	14	0	0.00	6	0	0.00			
01002 ARSENIC, TOTAL	Fresh Acute	360.	14	0	0.00	2	0	0.00	7	0	0.00	5	0	0.00			
	Drinking Water	50.	14	0	0.00	2	0	0.00	7	0	0.00	5	0	0.00			
01012 BERYLLIUM, TOTAL	Fresh Acute	130.	3	0	0.00				1	0	0.00	2	0	0.00			
	Drinking Water	4.	2 &	0	0.00							2	0	0.00			
01027 CADMIUM, TOTAL	Fresh Acute	3.9	8 &	1	0.13				4	0	0.00	4	1	0.25			
	Drinking Water	5.	8 &	1	0.13				4	0	0.00	4	1	0.25			
01034 CHROMIUM, TOTAL	Drinking Water	100.	13	0	0.00	2	0	0.00	7	0	0.00	4	0	0.00			
01042 COPPER, TOTAL	Fresh Acute	18.	11 &	1	0.09	2	0	0.00	7	0	0.00	2	1	0.50			
	Drinking Water	1300.	12	0	0.00	2	0	0.00	7	0	0.00	3	0	0.00			
01051 LEAD, TOTAL	Fresh Acute	82.	14	0	0.00	2	0	0.00	7	0	0.00	5	0	0.00			
	Drinking Water	15.	14	0	0.00	2	0	0.00	7	0	0.00	5	0	0.00			
01059 THALLIUM, TOTAL	Fresh Acute	1400.	3	0	0.00				1	0	0.00	2	0	0.00			
	Drinking Water	2.	0 &	0	0.00												
01065 NICKEL, DISSOLVED	Fresh Acute	1400.	3	0	0.00	1	0	0.00	2	0	0.00						
	Drinking Water	100.	3	0	0.00	1	0	0.00	2	0	0.00						
01067 NICKEL, TOTAL	Fresh Acute	1400.	10	0	0.00	1	0	0.00	5	0	0.00	4	0	0.00			
	Drinking Water	100.	10	1	0.10	1	0	0.00	5	1	0.20	4	0	0.00			
01077 SILVER, TOTAL	Fresh Acute	4.1	2	0	0.00							2	0	0.00			
	Drinking Water	100.	2	0	0.00							2	0	0.00			
01092 ZINC, TOTAL	Fresh Acute	120.	12	0	0.00	2	0	0.00	7	0	0.00	3	0	0.00			
	Drinking Water	5000.	12	0	0.00	2	0	0.00	7	0	0.00	3	0	0.00			
01147 SELENIUM, TOTAL	Fresh Acute	20.	4	0	0.00				1	0	0.00	3	0	0.00			
	Drinking Water	50.	4	0	0.00				1	0	0.00	3	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	146	65	0.45	67	27	0.40	54	24	0.44	25	14	0.56			
34356 ENDOSULFAN, BETA, TOTAL	Fresh Acute	0.22	3	0	0.00				1	0	0.00	2	0	0.00			
34361 ENDOSULFAN, ALPHA, TOTAL	Fresh Acute	0.22	3	0	0.00				1	0	0.00	2	0	0.00			
39032 PCP (PENTACHLOROPHENOL) WHOLE WATER SAMP	Fresh Acute	20.	6	0	0.00	1	0	0.00	1	0	0.00	4	0	0.00			
	Drinking Water	1.	6	0	0.00	1	0	0.00	1	0	0.00	4	0	0.00			
39300 P,P' DDT IN WHOLE WATER SAMPLE	Fresh Acute	1.1	6	0	0.00	1	0	0.00	1	0	0.00	4	0	0.00			
39310 P,P' DDD IN WHOLE WATER SAMPLE	Fresh Acute	0.6	6	0	0.00	1	0	0.00	1	0	0.00	4	0	0.00			
39320 P,P' DDE IN WHOLE WATER SAMPLE	Fresh Acute	1050.	6	0	0.00	1	0	0.00	1	0	0.00	4	0	0.00			
39330 ALDRIN IN WHOLE WATER SAMPLE	Fresh Acute	3.	10	0	0.00	1	0	0.00	4	0	0.00	5	0	0.00			
39340 GAMMA-BHC(LINDANE), WHOLE WATER	Fresh Acute	2.	3	0	0.00				1	0	0.00	2	0	0.00			
	Drinking Water	0.2	3	0	0.00				1	0	0.00	2	0	0.00			
39350 CHLORDANE(TECH MIX & METABS), WHOLE WATE	Fresh Acute	2.4	3	0	0.00	1	0	0.00				2	0	0.00			
	Drinking Water	2.	3	0	0.00	1	0	0.00				2	0	0.00			
39380 DIELDRIN IN WHOLE WATER SAMPLE	Fresh Acute	2.5	6	0	0.00	1	0	0.00	1	0	0.00	4	0	0.00			
39390 ENDRIN IN WHOLE WATER SAMPLE	Fresh Acute	0.18	6	0	0.00	1	0	0.00	1	0	0.00	4	0	0.00			
	Drinking Water	2.	6	0	0.00	1	0	0.00	1	0	0.00	4	0	0.00			
39400 TOXAPHENE IN WHOLE WATER SAMPLE	Fresh Acute	0.73	3	0	0.00				1	0	0.00	2	0	0.00			
	Drinking Water	3.	3	0	0.00				1	0	0.00	2	0	0.00			
39410 HEPTACHLOR IN WHOLE WATER SAMPLE	Fresh Acute	0.52	3	0	0.00				1	0	0.00	2	0	0.00			
	Drinking Water	0.4	3	0	0.00				1	0	0.00	2	0	0.00			
39420 HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE	Fresh Acute	0.52	3	0	0.00				1	0	0.00	2	0	0.00			
	Drinking Water	0.2	3	0	0.00				1	0	0.00	2	0	0.00			
39480 METHOXYCHLOR IN WHOLE WATER SAMPLE	Drinking Water	40.	3	0	0.00	1	0	0.00				2	0	0.00			
39630 ATRAZINE(AATREX) IN WHOLE WATER SAMPLE	Drinking Water	3.	3	0	0.00				3	0	0.00						
39700 HEXACHLOROBENZENE IN WHOLE WATER SAMPLE	Fresh Acute	6.	3	0	0.00	1	0	0.00				2	0	0.00			
	Drinking Water	1.	3	0	0.00	1	0	0.00				2	0	0.00			
39730 2,4-D IN WHOLE WATER SAMPLE	Drinking Water	70.	3	0	0.00				1	0	0.00	2	0	0.00			
39760 SILVEX IN WHOLE WATER SAMPLE	Drinking Water	50.	3	0	0.00				1	0	0.00	2	0	0.00			
50060 CHLORINE, TOTAL RESIDUAL	Fresh Acute	0.019	37	12	0.32	15	4	0.27	17	6	0.35	5	2	0.40			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### EPA Water Quality Criteria Analysis for Station: MANA0001

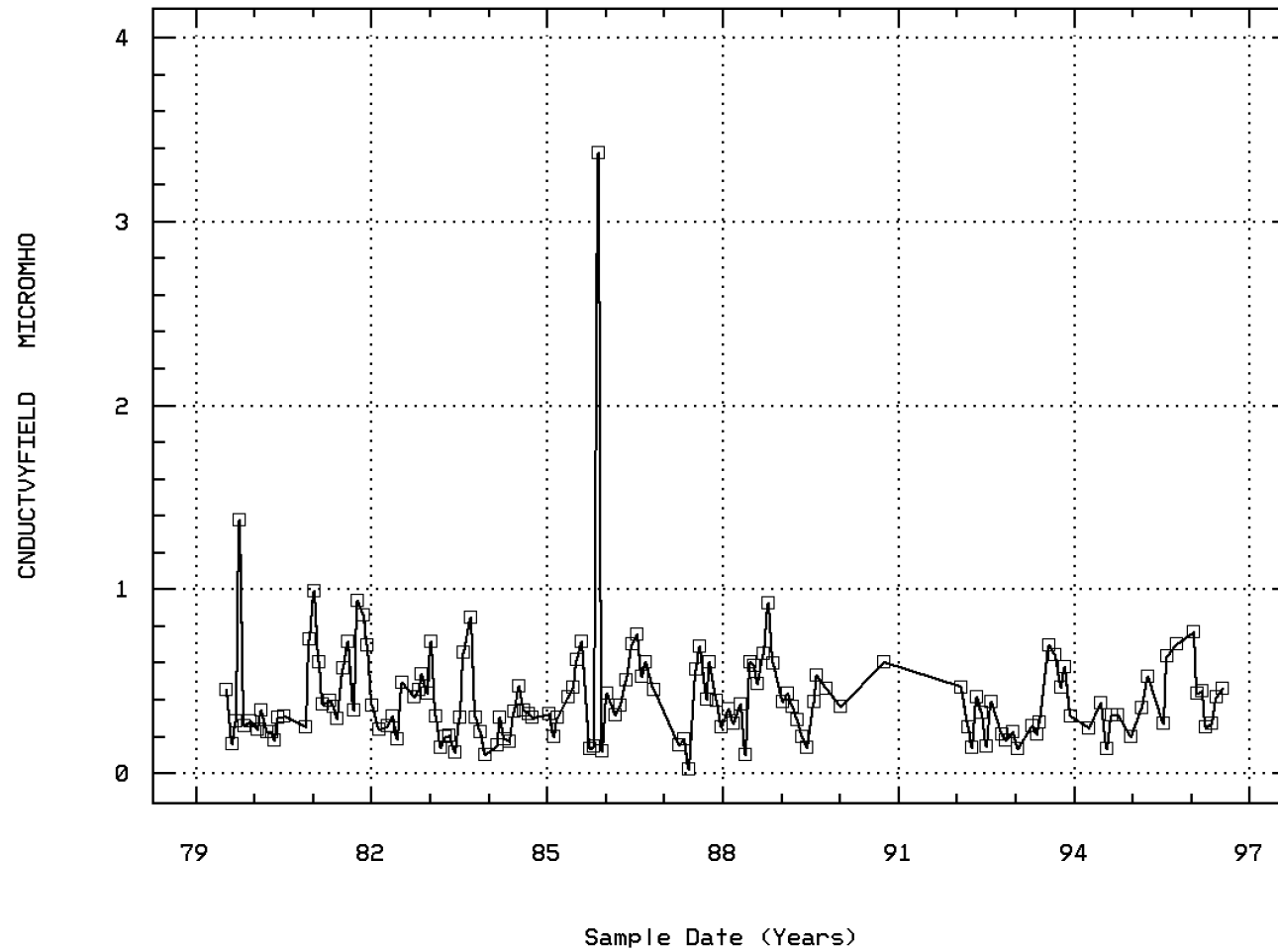
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			Obs	Standard	Exceeding	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
71900	MERCURY, TOTAL																
	Fresh Acute	2.4	13	0	0.00	2	0	0.00	6	0	0.00	5	0	0.00			
	Drinking Water	2.	13	0	0.00	2	0	0.00	6	0	0.00	5	0	0.00			
82078	TURBIDITY, FIELD																
	Other-Hi Lim.	50.	18	0	0.00	8	0	0.00	7	0	0.00	3	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

Station: MANA0001 Parameter Code: 00094

(X 1000)

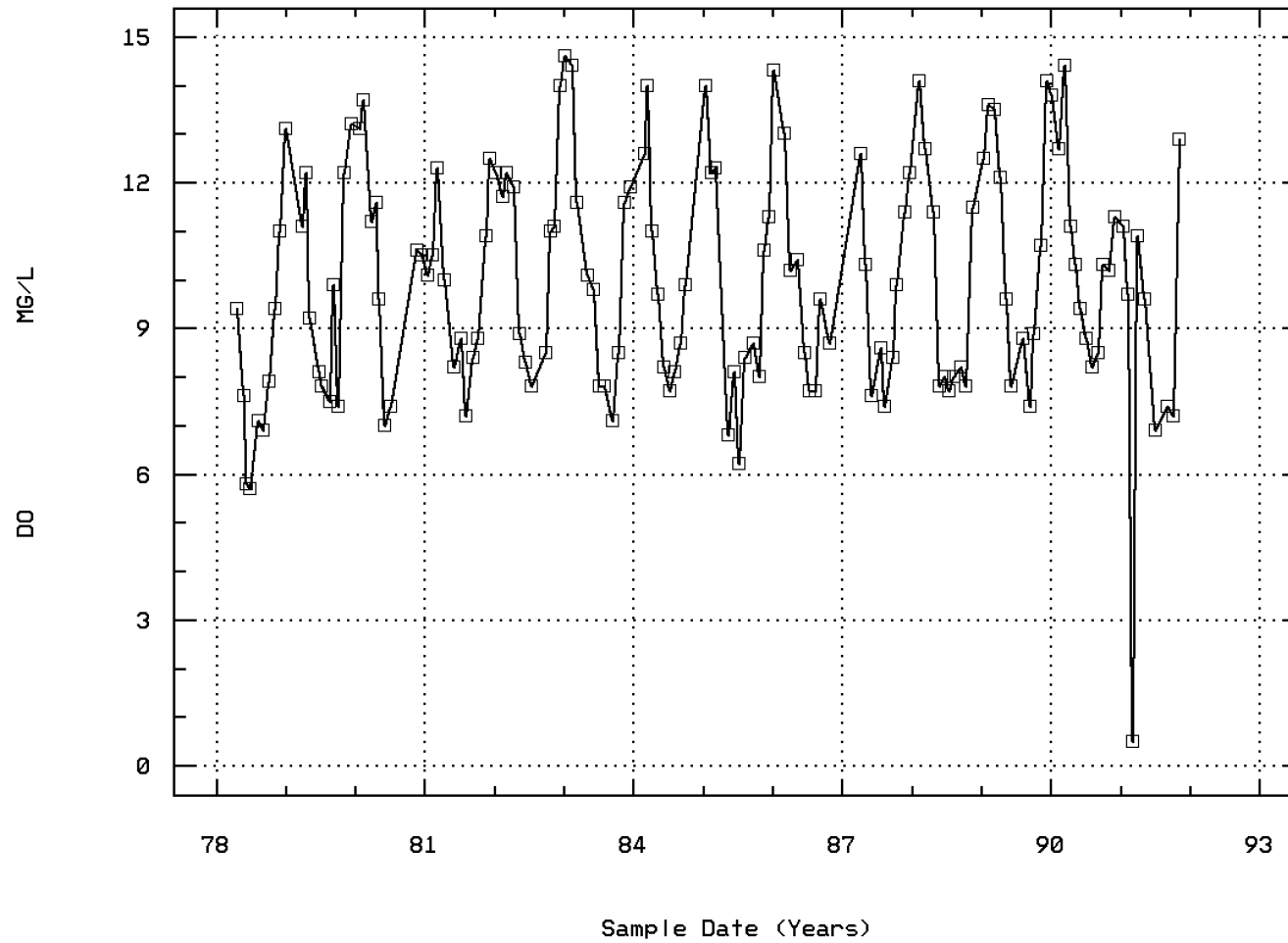
SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00300

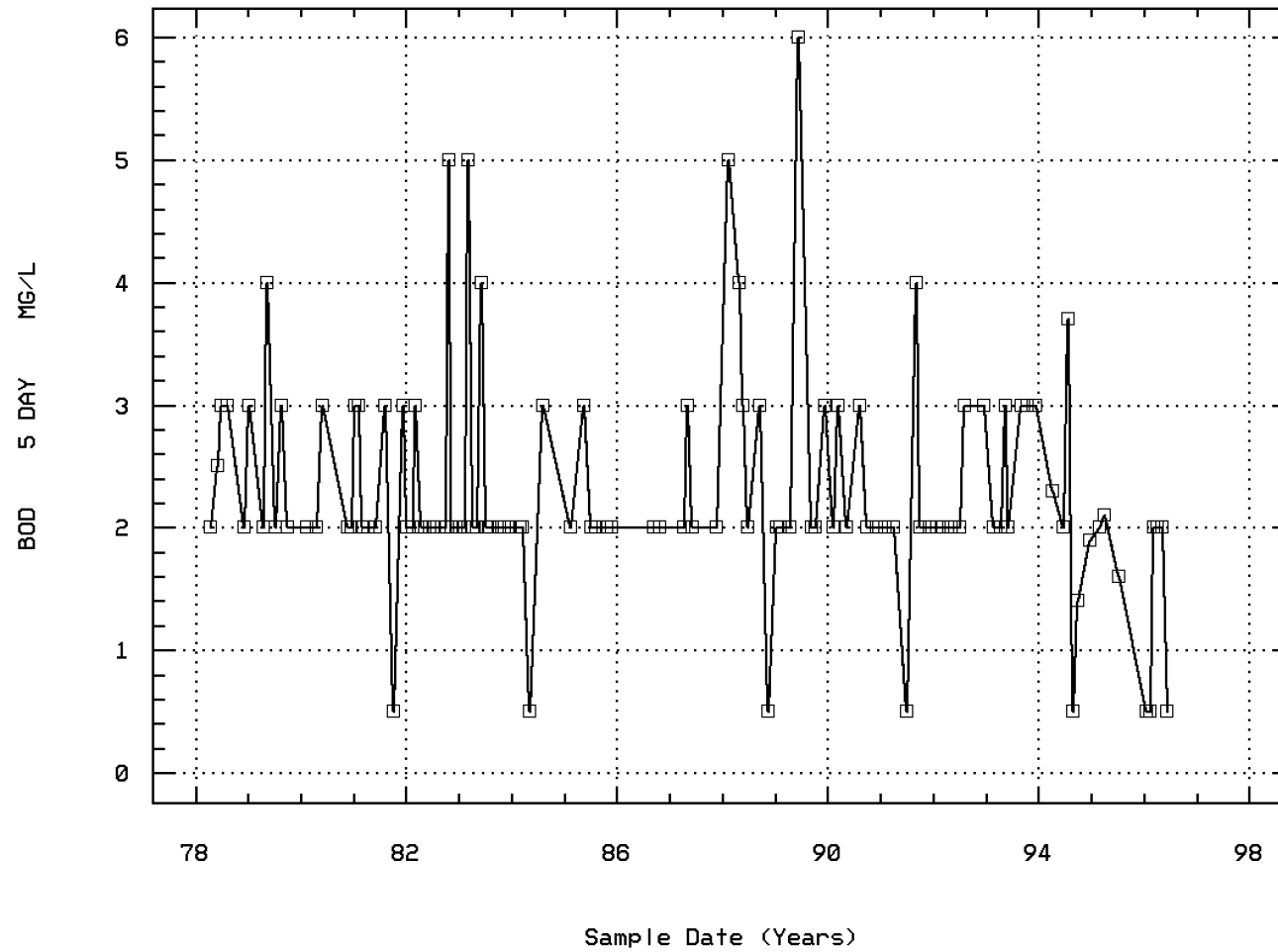
OXYGEN, DISSOLVED



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00310

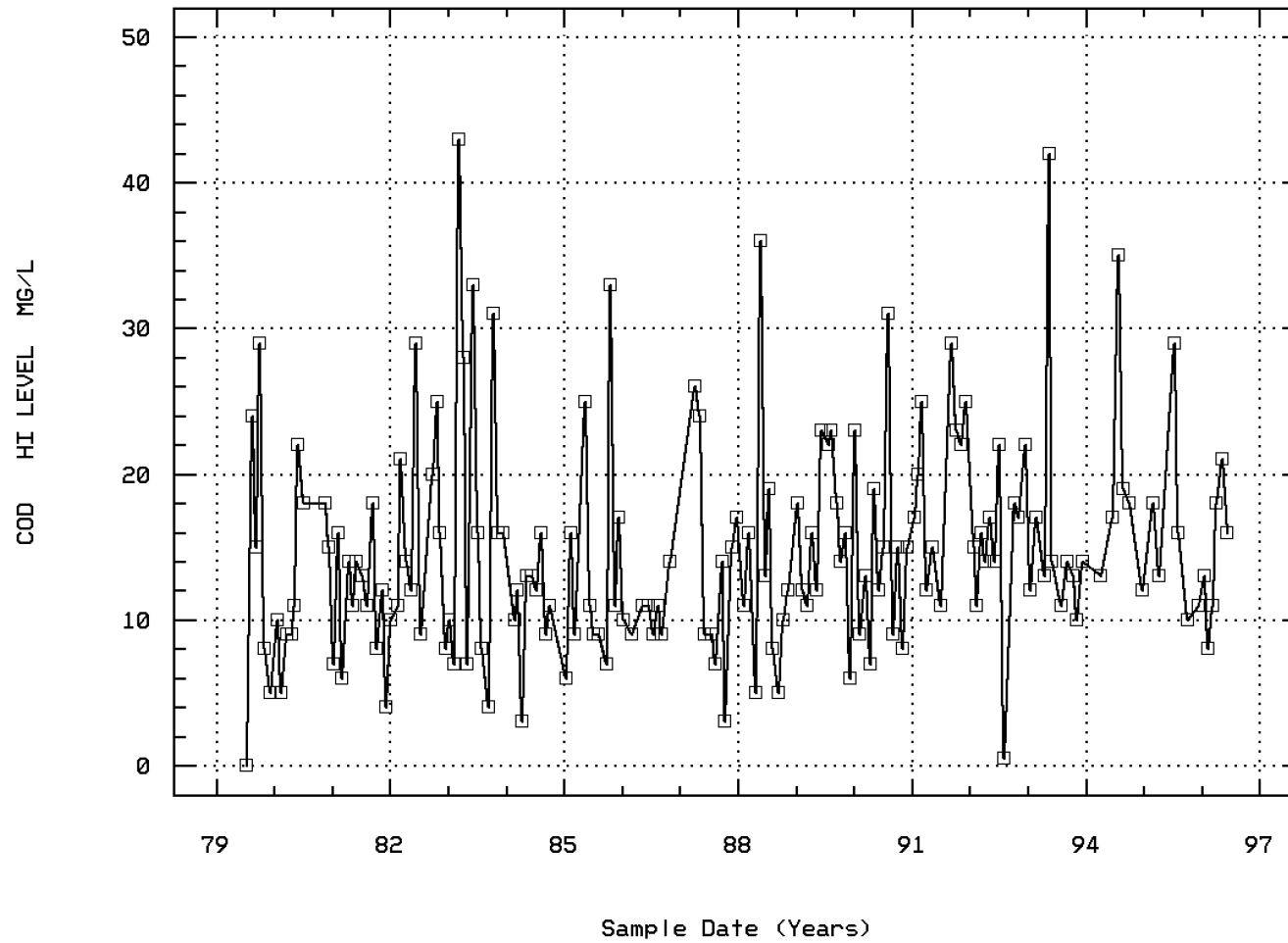
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RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00340

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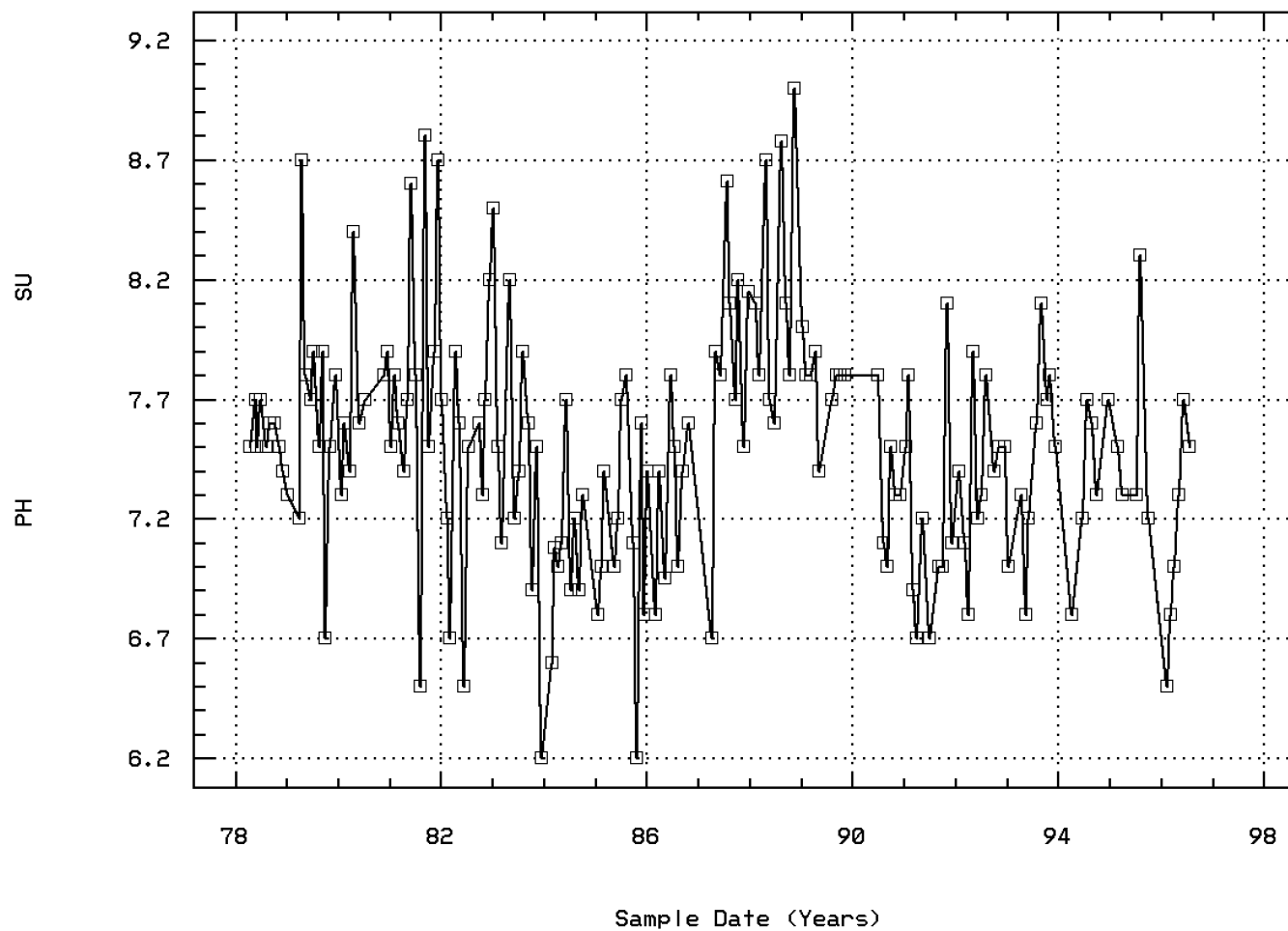


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Station: MANA0001 Parameter Code: 00400

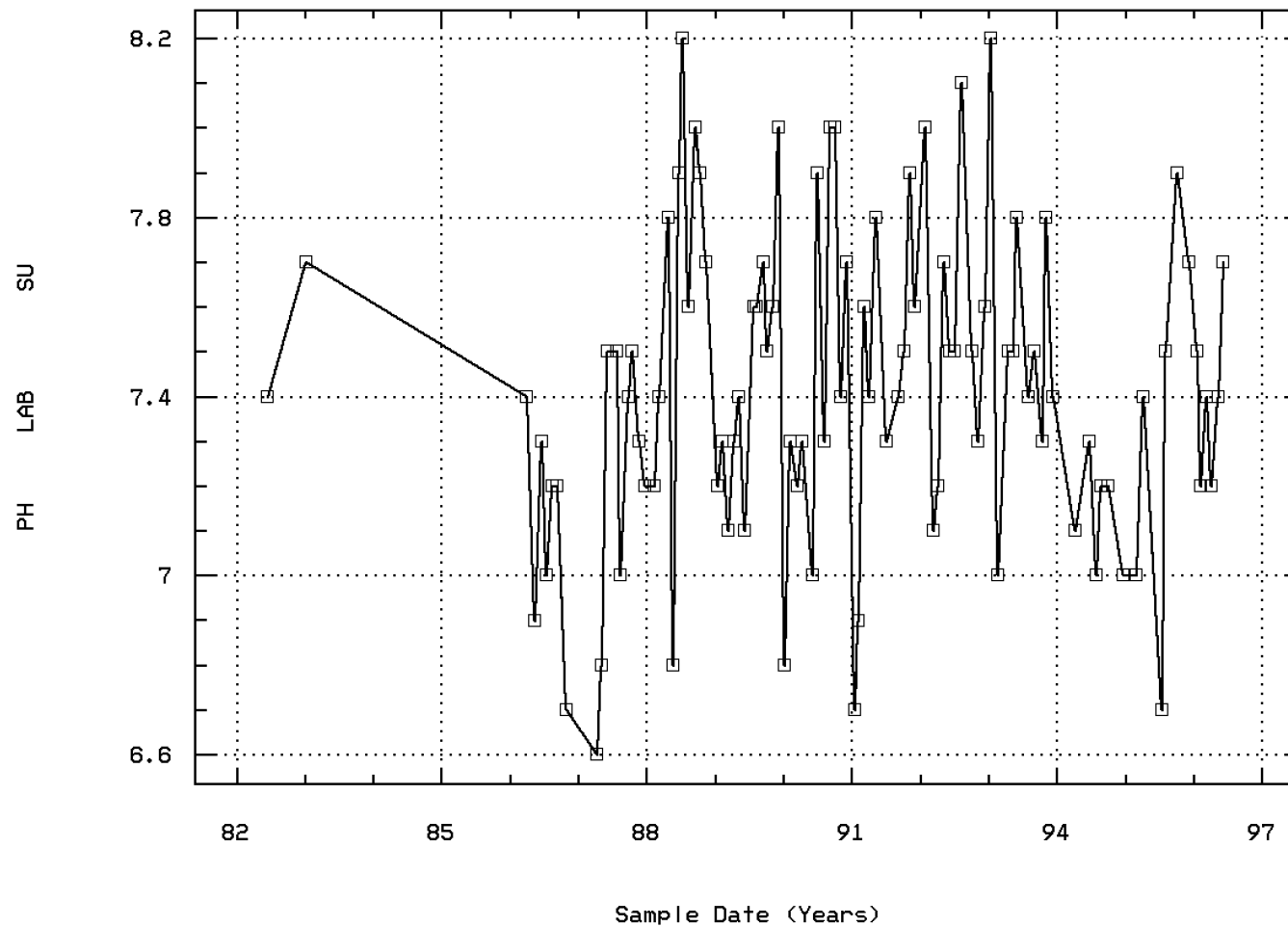
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Station: MANA0001 Parameter Code: 00403

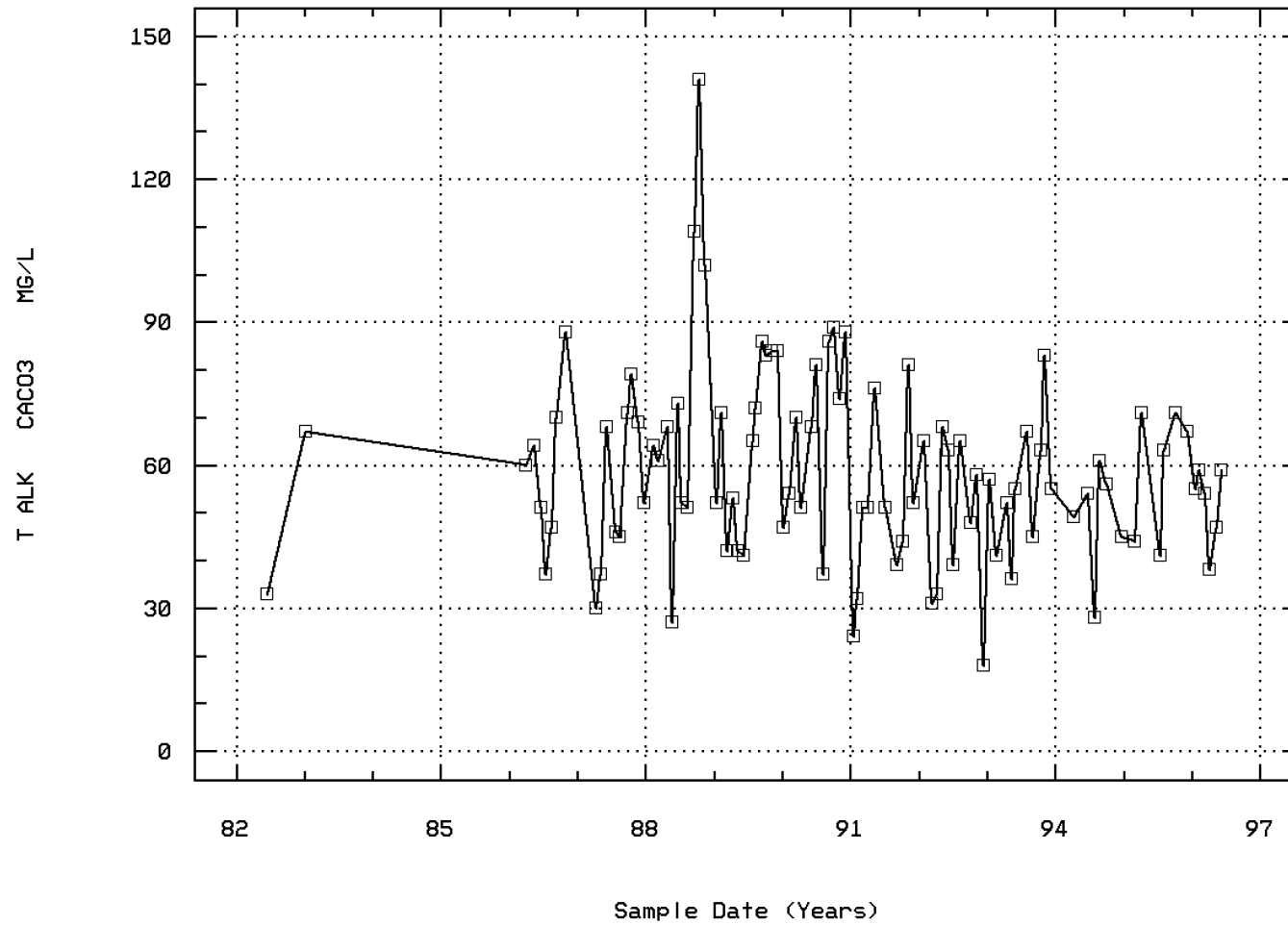
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RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00410

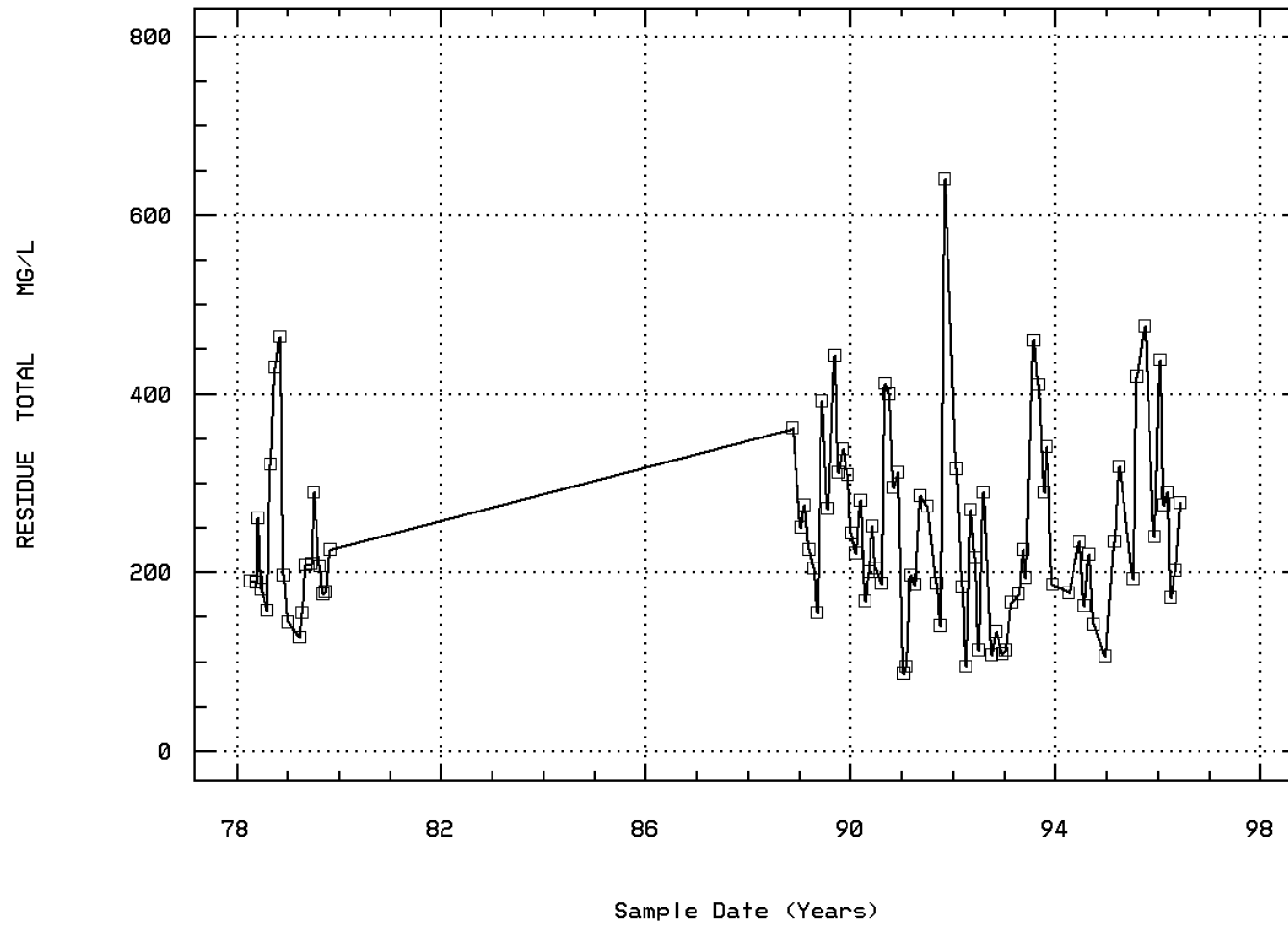
ALKALINITY, TOTAL (MG/L AS CaCO3)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00500

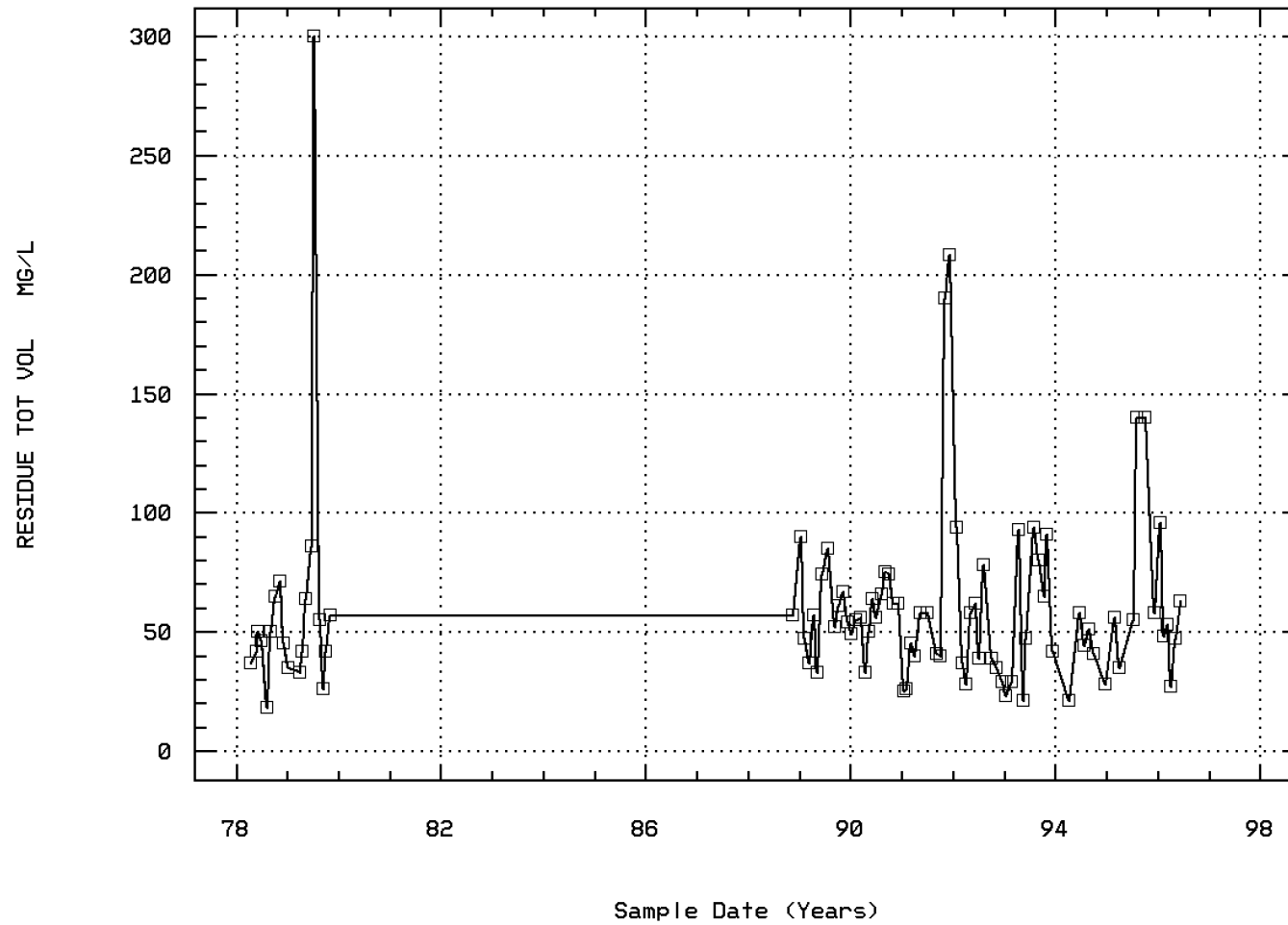
RESIDUE, TOTAL (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00505

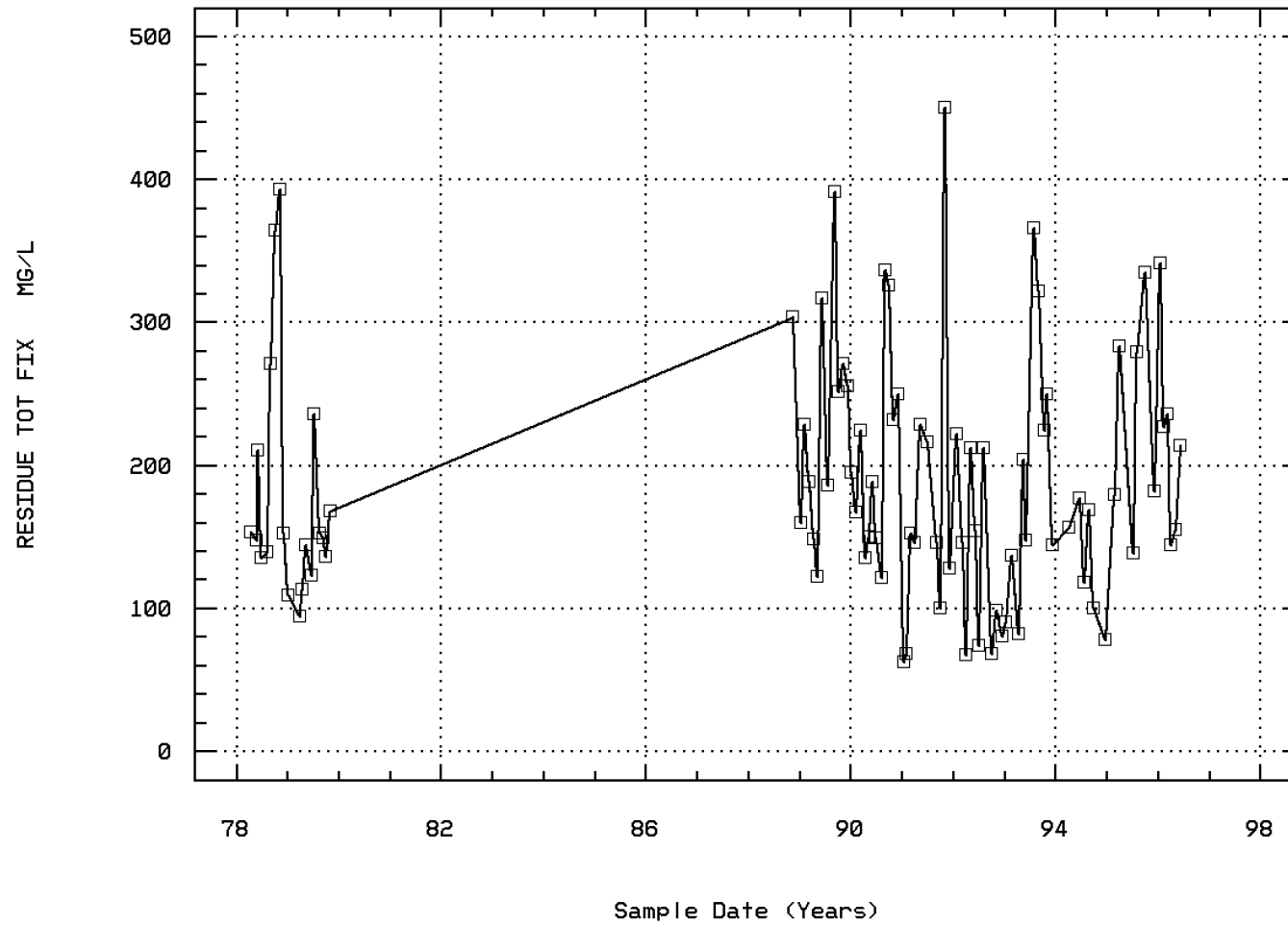
RESIDUE, TOTAL VOLATILE (MG/L)



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Station: MANA0001 Parameter Code: 00510

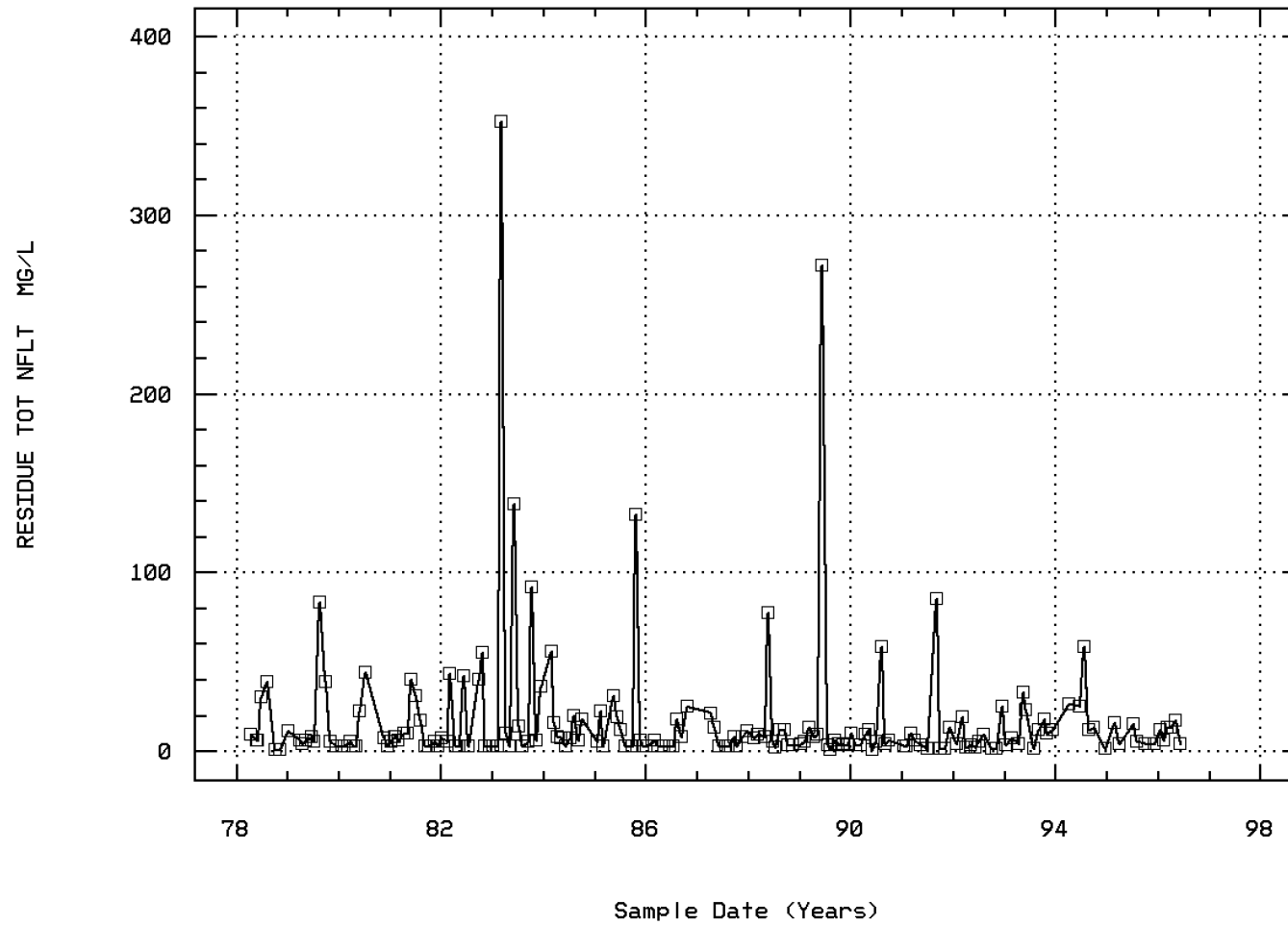
RESIDUE, TOTAL FIXED (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00530

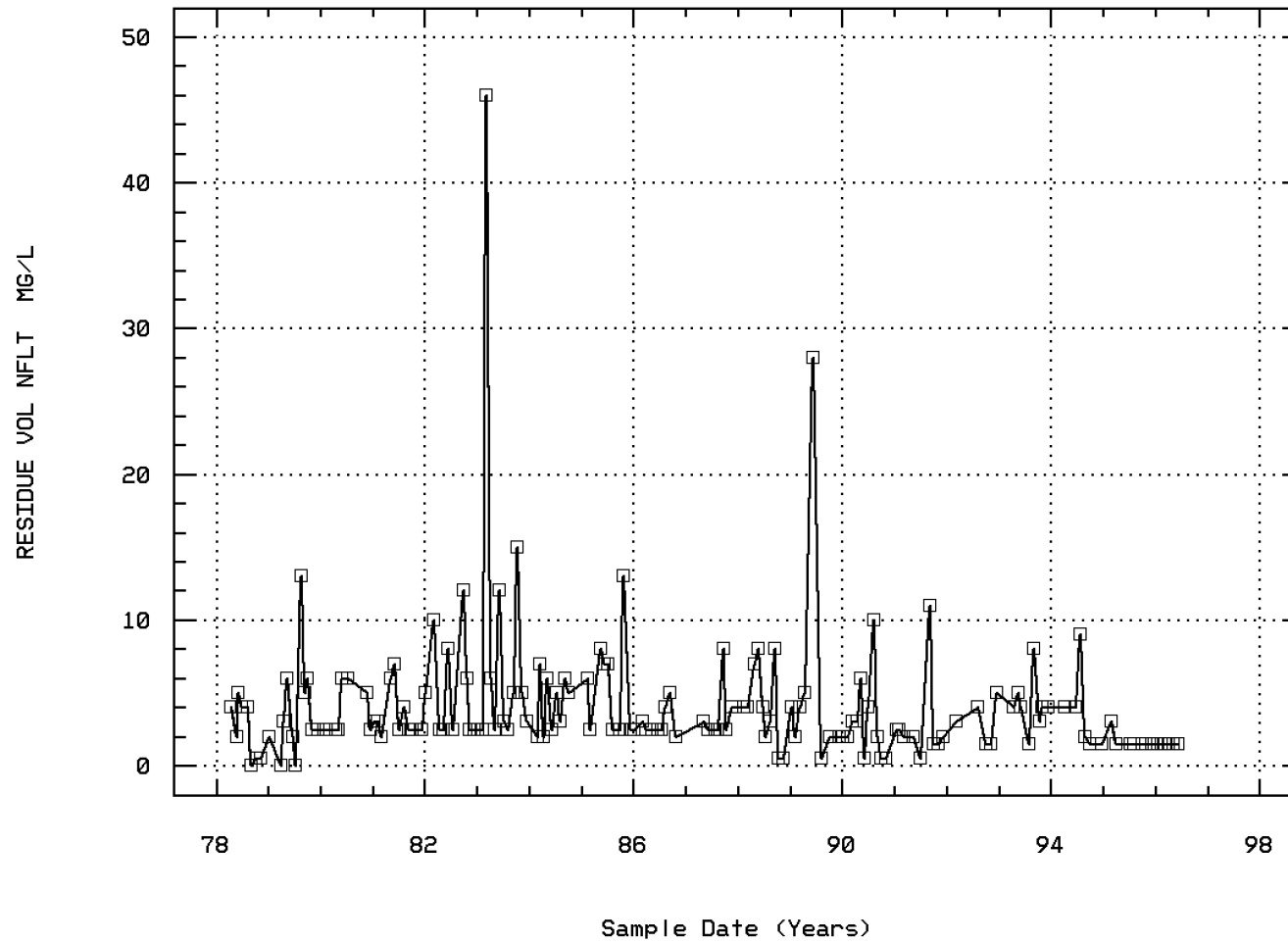
RESIDUE, TOTAL NONFILTRABLE (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00535

RESIDUE, VOLATILE NONFILTRABLE (MG/L)

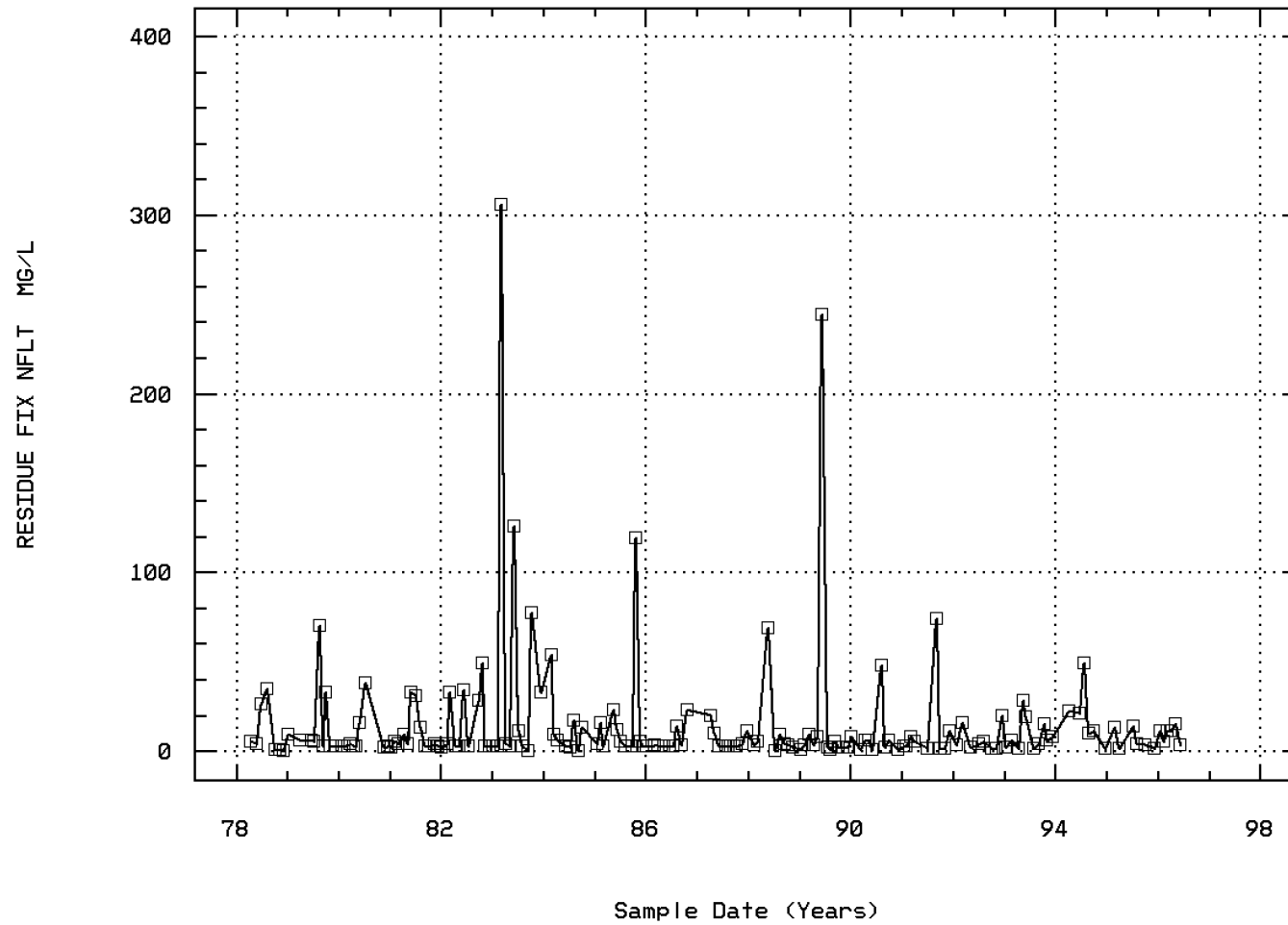


RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY



Station: MANA0001 Parameter Code: 00540

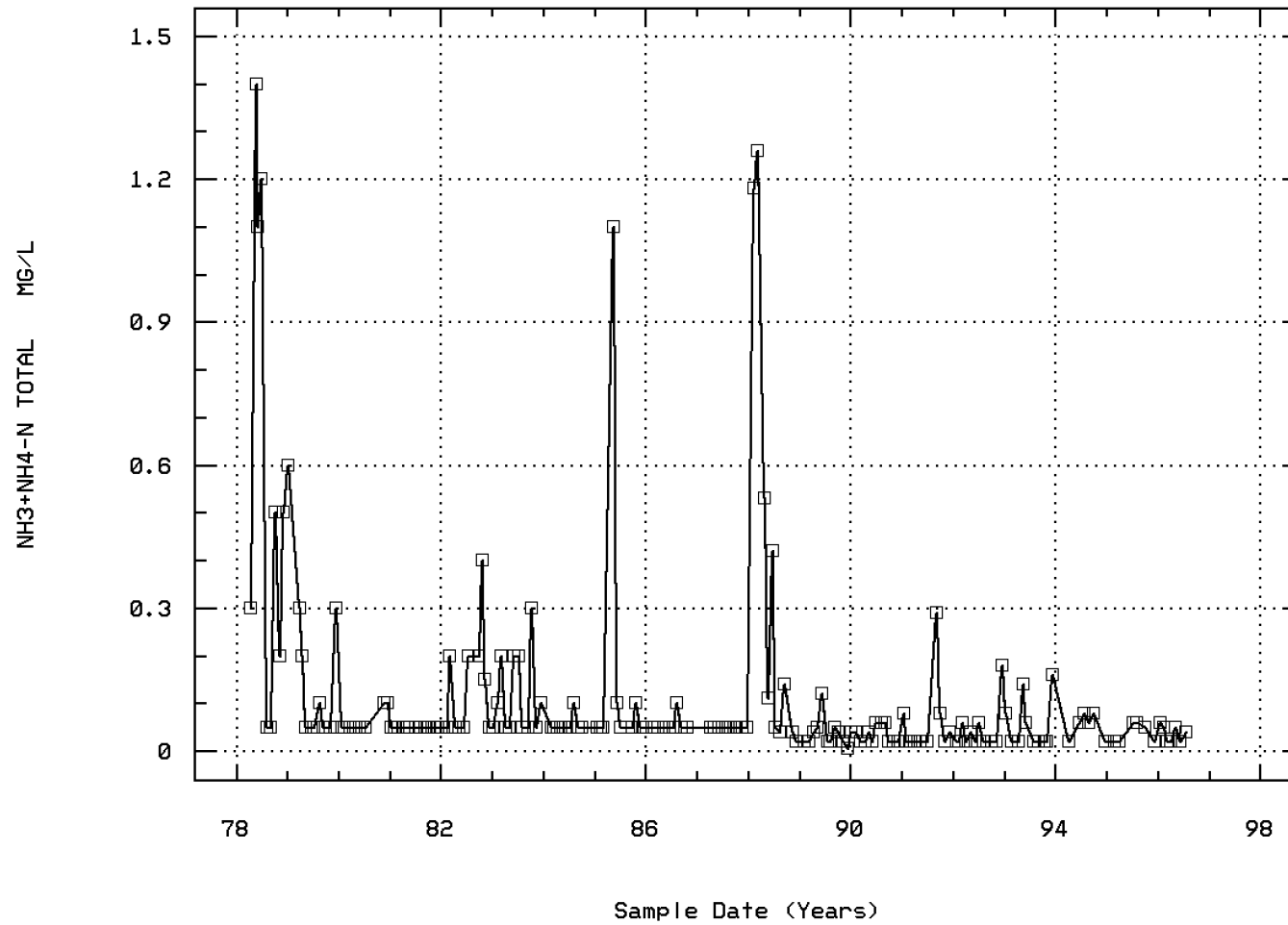
RESIDUE, FIXED NONFILTRABLE (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00610

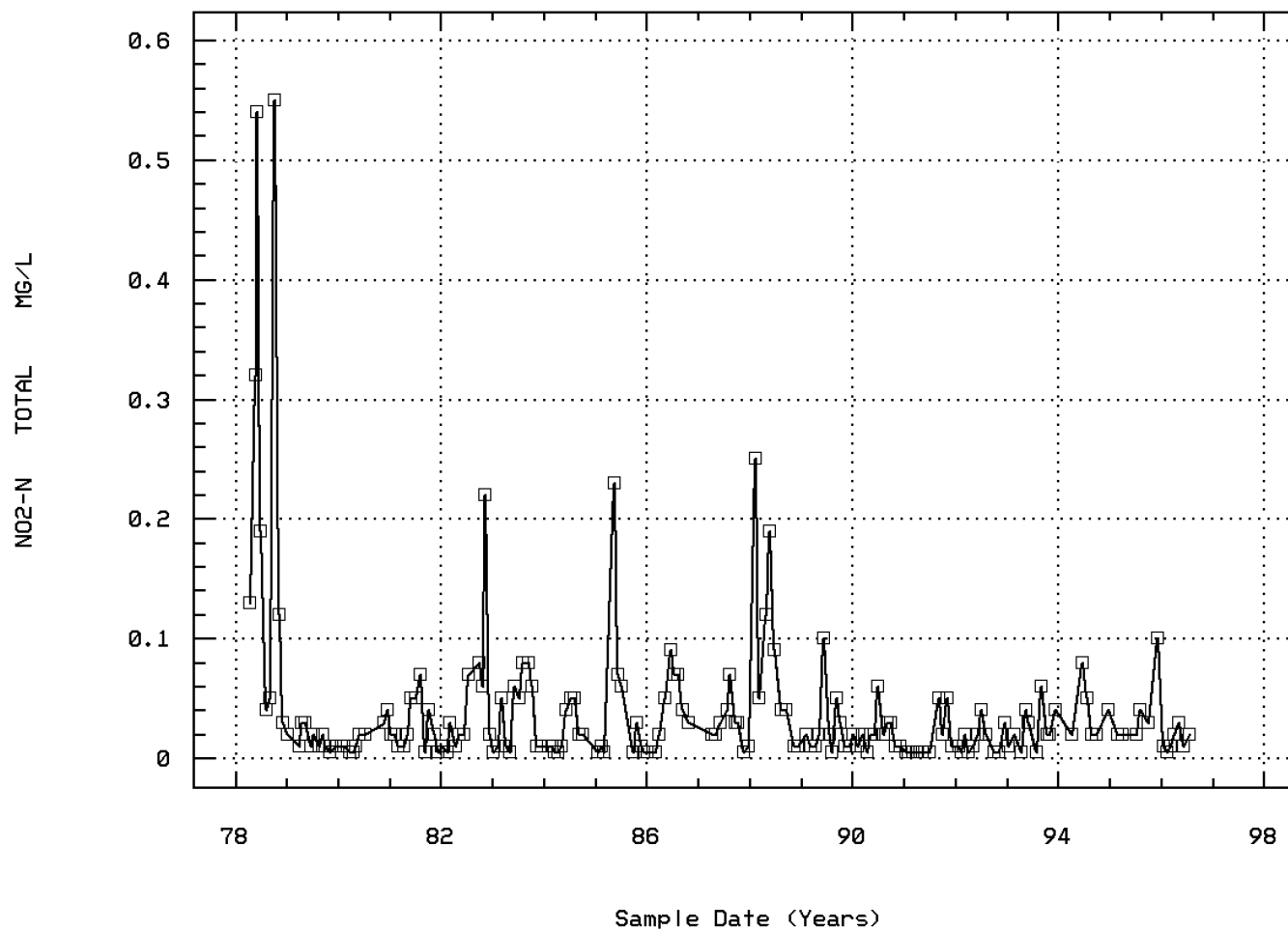
NITROGEN, AMMONIA, TOTAL (MG/L AS N)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00615

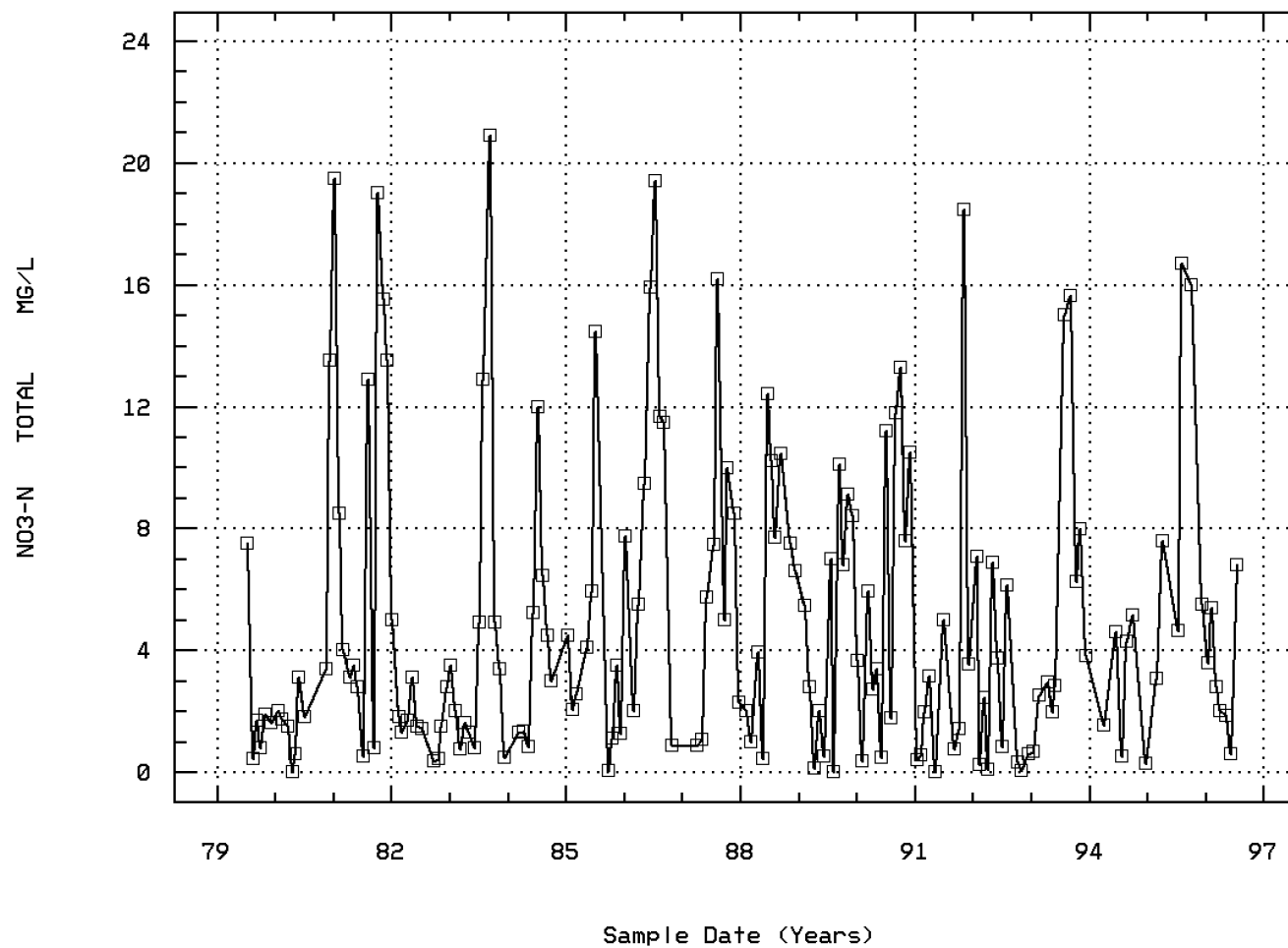
NITRITE NITROGEN, TOTAL (MG/L AS N)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00620

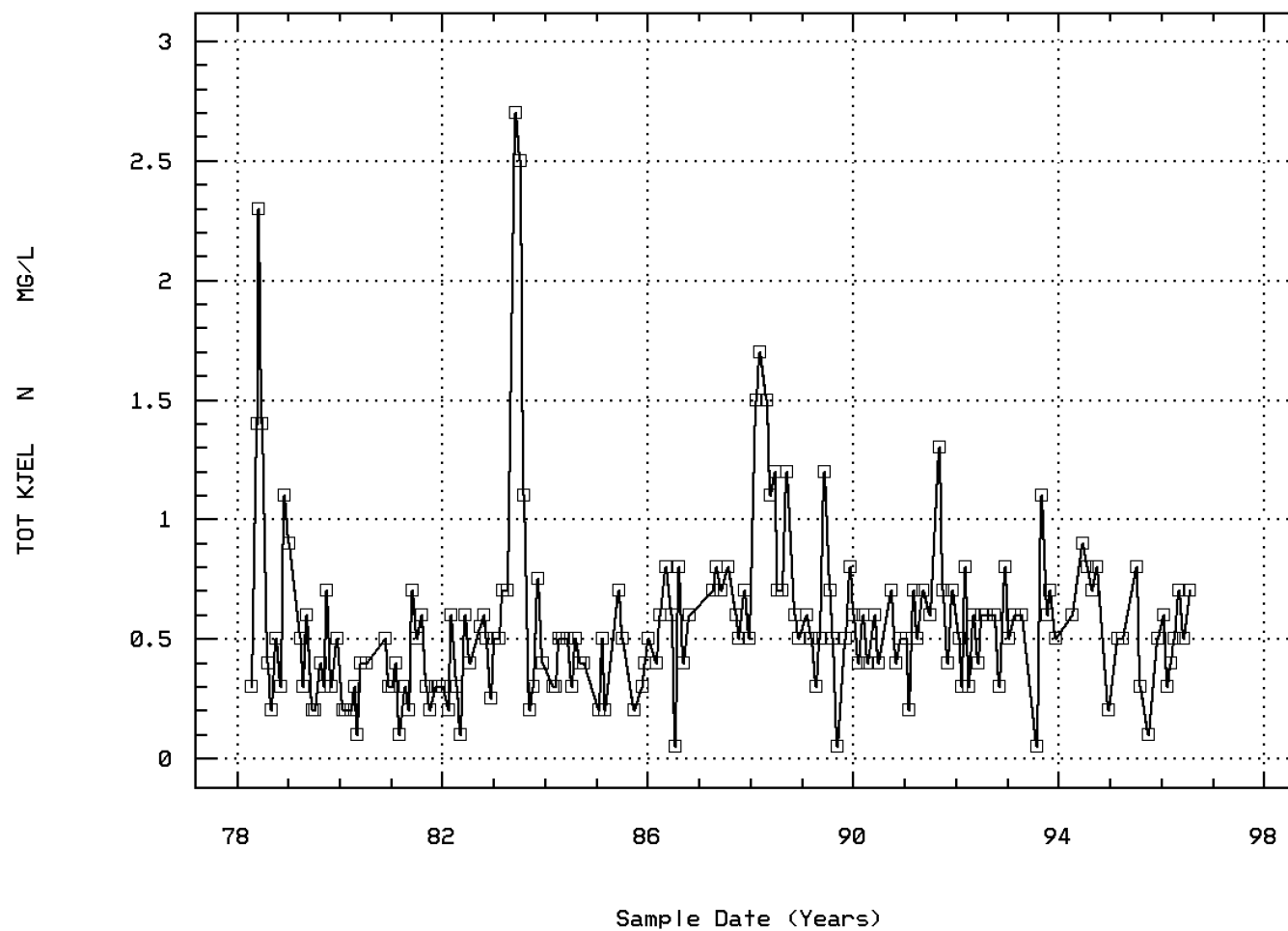
NITRATE NITROGEN, TOTAL (MG/L AS N)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00625

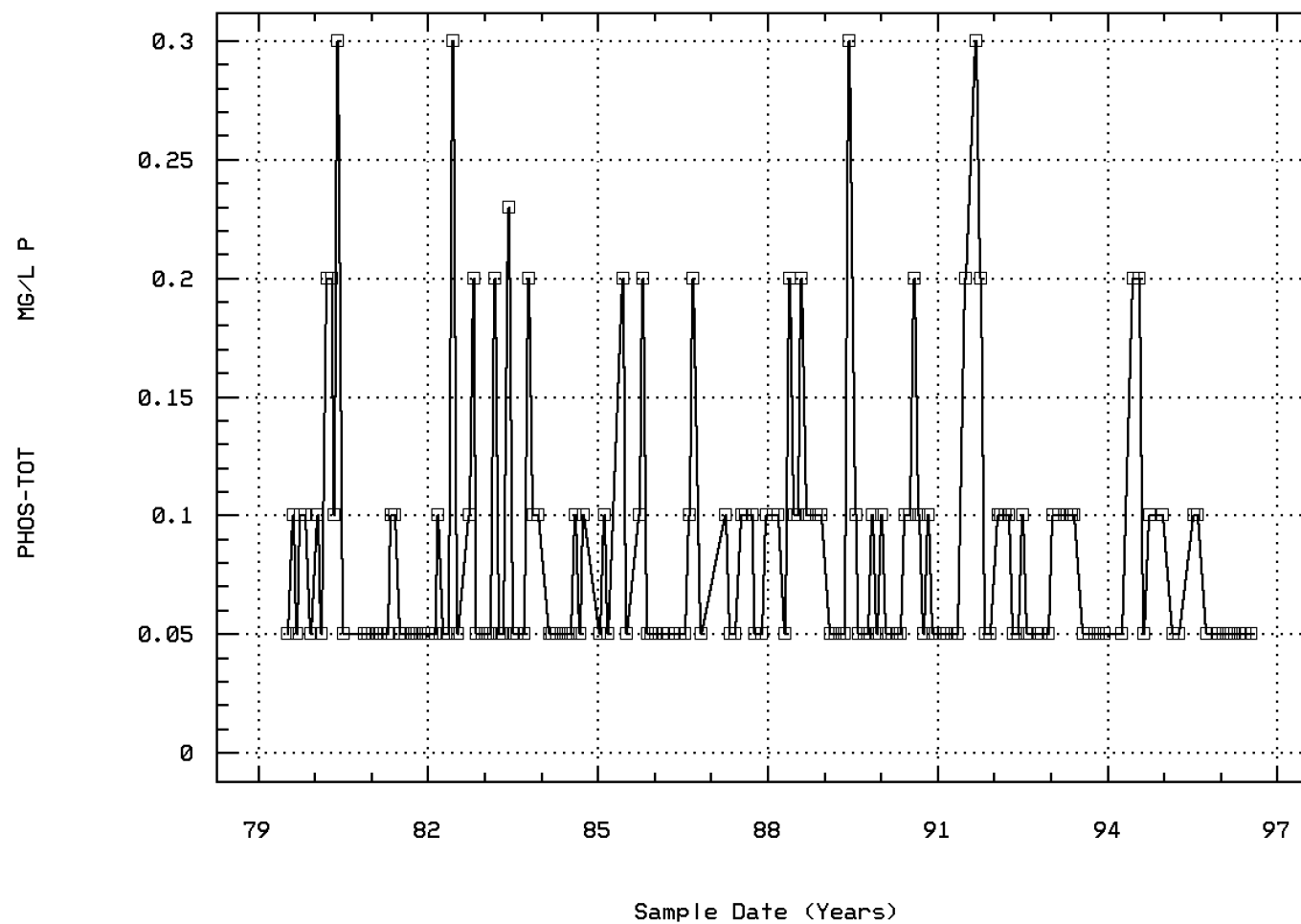
NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00665

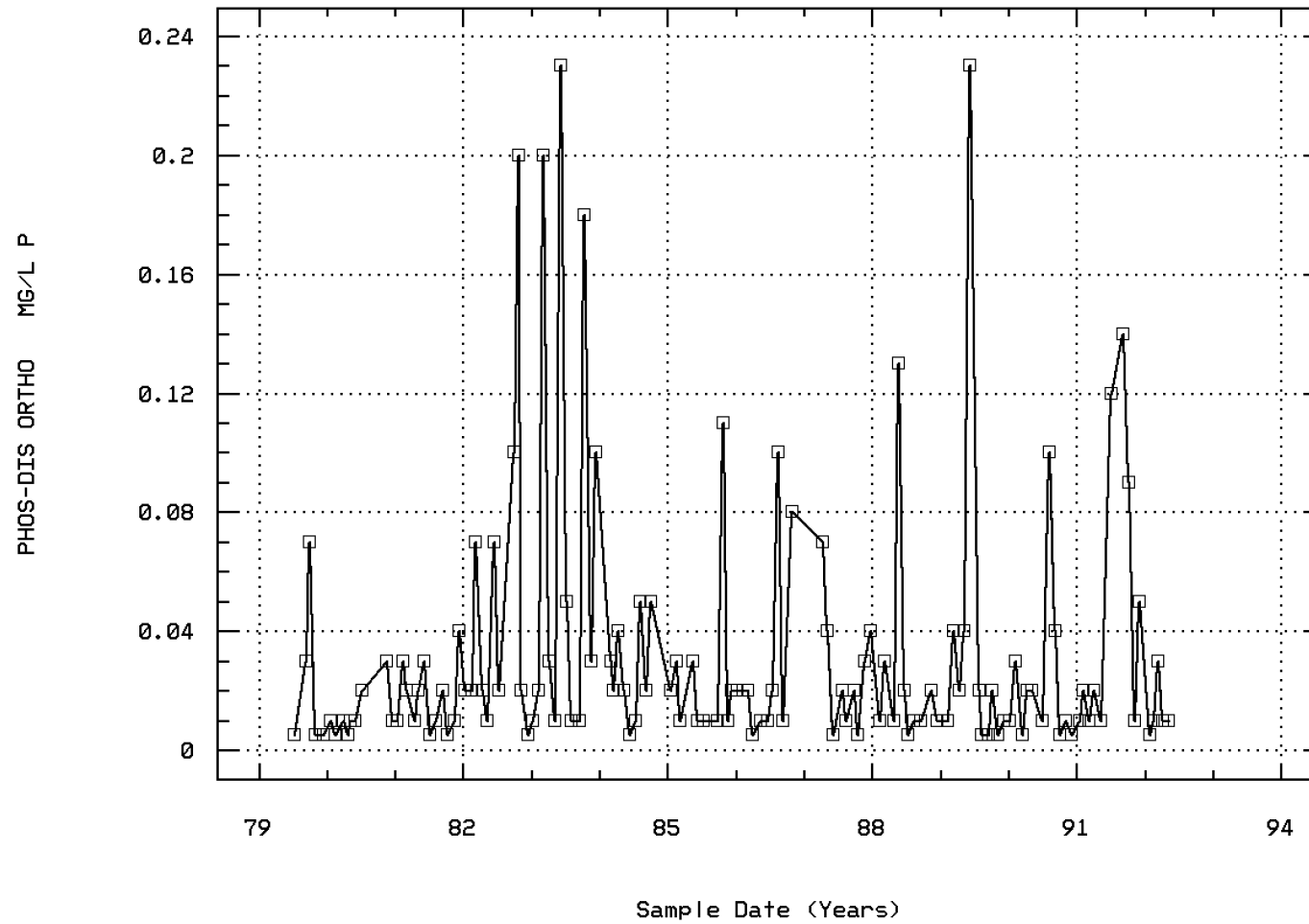
PHOSPHORUS, TOTAL (MG/L AS P)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00671

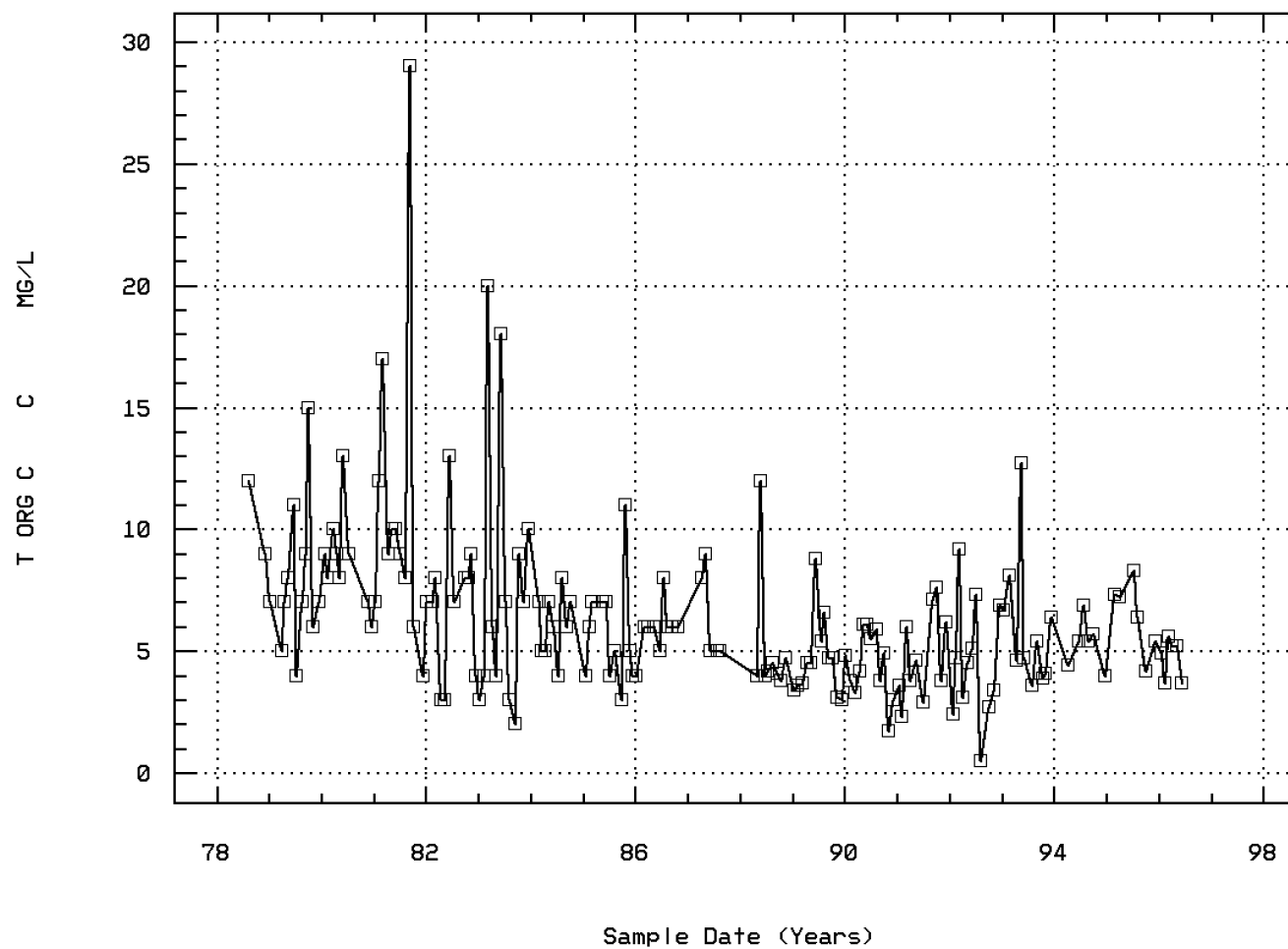
PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (M



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00680

CARBON, TOTAL ORGANIC (MG/L AS C)

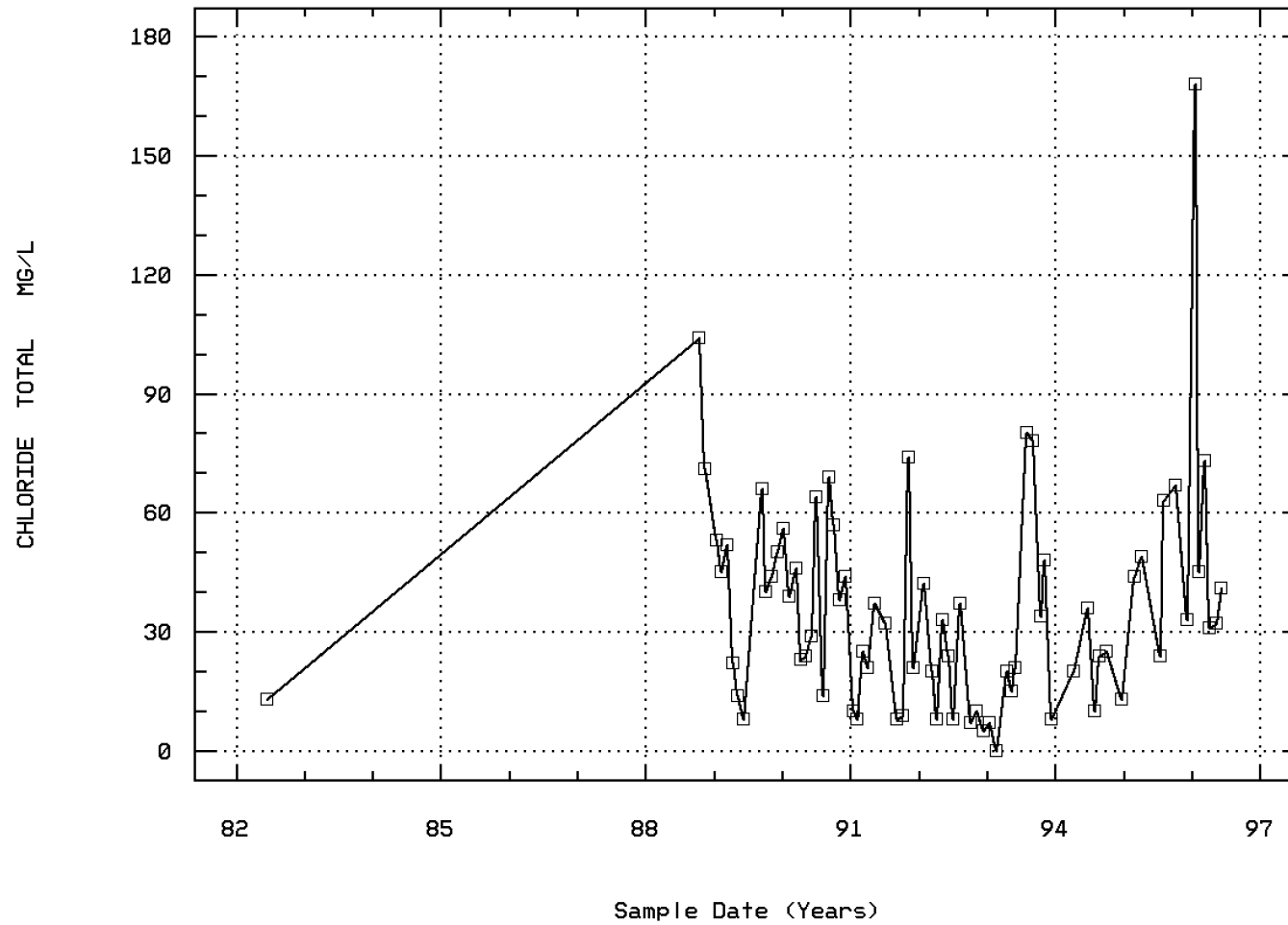


RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY



Station: MANA0001 Parameter Code: 00940

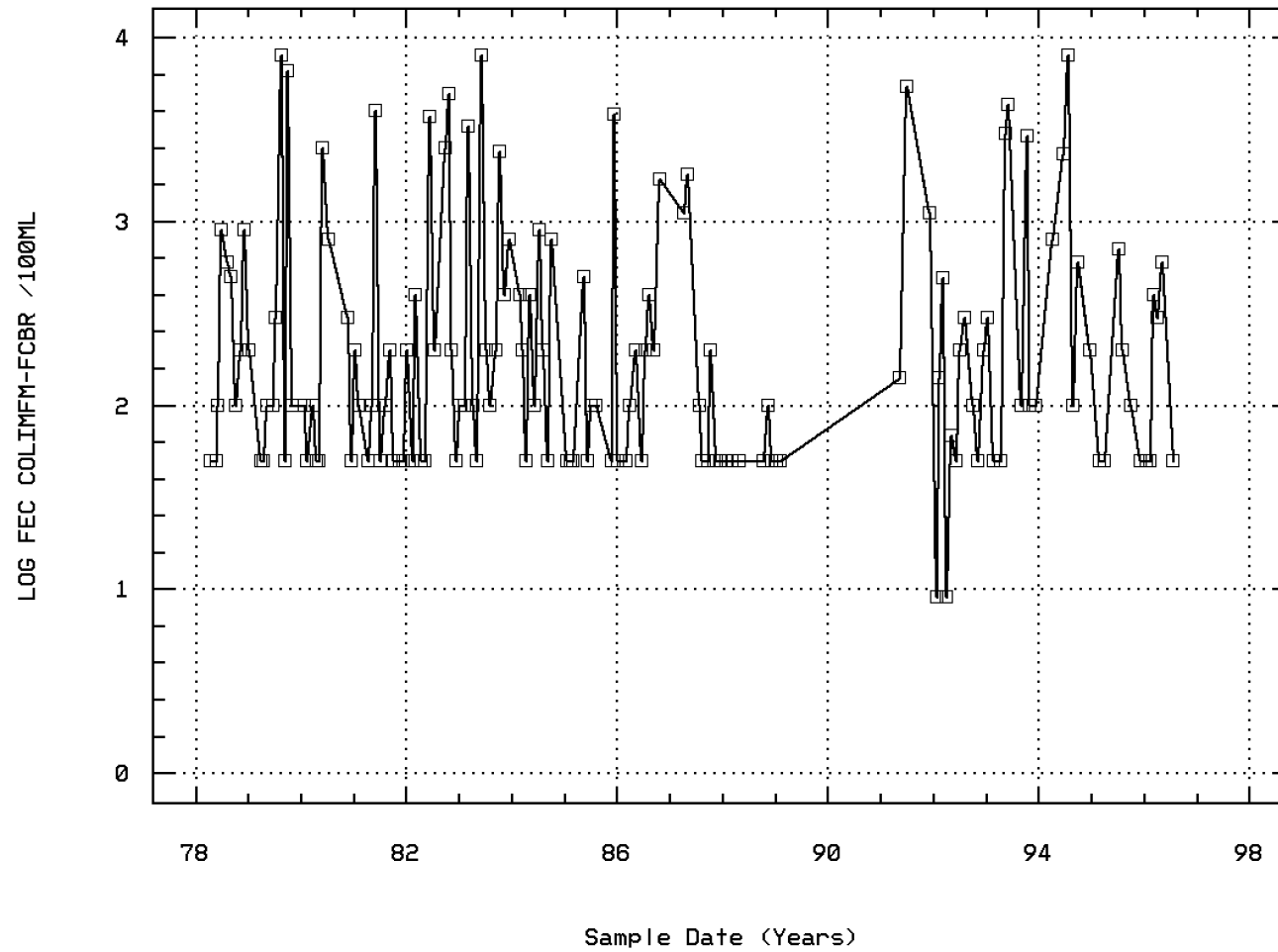
CHLORIDE, TOTAL IN WATER



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 31616

LOG FECAL COLIFORM, MEMBR FILTER, M-FC BR



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

### Annual Analysis for 1978 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	10	19.	18.55	27.	7.	51.803	7.197	7.55	12.5	25.25	26.9
00300p	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	10	7.75	8.02	11.	5.7	3.022	1.738	5.71	6.625	9.4	10.84
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	9	2.	1.833	3.	1.	0.75	0.866	1.	1.	2.75	3.
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	10	7.5	7.55	7.7	7.4	0.009	0.097	7.41	7.5	7.625	7.7
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	10	7.5	7.541	7.7	7.4	0.01	0.098	7.41	7.5	7.625	7.7
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	10	0.032	0.029	0.04	0.02	0.	0.006	0.02	0.024	0.032	0.039
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	9	197.	265.333	464.	157.	13050.25	114.238	157.	185.	375.	464.
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	9	46.	47.111	71.	18.	236.111	15.366	18.	39.5	57.5	71.
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	9	153.	218.222	393.	135.	10195.694	100.974	135.	143.	317.5	393.
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	9	6.	10.333	39.	0.5	201.938	14.21	0.5	0.75	19.5	39.
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	9	2.	2.333	5.	0.	3.688	1.92	0.	0.5	4.	5.
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	9	1.	8.111	35.	0.	169.049	13.002	0.	0.5	15.5	35.
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	9	0.5	0.589	1.4	0.05	0.265	0.515	0.05	0.125	1.15	1.4
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	9	0.13	0.219	0.55	0.03	0.042	0.205	0.03	0.045	0.43	0.55
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	9	0.5	0.878	2.3	0.2	0.514	0.717	0.2	0.3	1.4	2.3
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	2	10.5	10.5	12.	9.	4.5	2.121	**	**	**	**
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	9	200.	377.778	900.	50.	126319.444	355.414	50.	75.	750.	900.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	9	2.301	2.343	2.954	1.699	0.266	0.516	1.699	1.849	2.866	2.954
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			220.156								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1979 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	11	18.9	14.945	25.	0.	72.393	8.508	0.4	7.5	22.	24.6
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	6	280.5	467.5	1378.	159.	207825.1	455.878	**	**	**	**
00300p	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	11	9.9	10.155	13.2	7.4	5.259	2.293	7.42	7.8	12.2	13.18
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	10	2.	2.	4.	1.	1.111	1.054	1.	1.	3.	3.9
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	6	11.5	13.5	29.	0.	127.5	11.292	**	**	**	**
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	11	7.7	7.636	8.7	6.7	0.255	0.505	6.8	7.3	7.9	8.54
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	11	7.7	7.384	8.7	6.7	0.325	0.57	6.8	7.3	7.9	8.54
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	11	0.02	0.041	0.2	0.002	0.003	0.055	0.004	0.013	0.05	0.172
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	10	192.5	191.7	289.	127.	2183.344	46.726	128.7	152.25	213.	282.6
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	10	48.5	74.	300.	26.	6613.778	81.325	26.7	34.5	69.5	278.6
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	10	140.	142.4	236.	94.	1588.267	39.853	95.5	112.	156.	229.2
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	10	6.	16.95	83.	2.5	651.803	25.53	2.65	4.75	18.	78.6
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	11	2.5	3.818	13.	0.	13.514	3.676	0.	2.	6.	11.6
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	11	5.	12.591	70.	1.	444.391	21.081	1.	2.5	9.	62.6
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	11 ##	0.05	0.164	0.6	0.05	0.031	0.176	0.05	0.05	0.3	0.54
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	11	0.01	0.016	0.03	0.005	0.	0.009	0.006	0.01	0.02	0.03
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	6	1.65	2.32	7.5	0.42	6.766	2.601	**	**	**	**
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	11	0.4	0.445	0.9	0.2	0.049	0.221	0.2	0.3	0.6	0.86
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	6 ##	0.075	0.075	0.1	0.05	0.001	0.027	**	**	**	**
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	5 ##	0.005	0.023	0.07	0.005	0.001	0.028	**	**	**	**
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	11	7.	7.818	15.	4.	9.164	3.027	4.2	6.	9.	14.2
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	10	100.	1555.	8000.	50.	9283027.778	3046.806	50.	50.	1875.	7860.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	10	2.	2.36	3.903	1.699	0.692	0.832	1.699	1.699	2.813	3.895
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			228.965								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1980 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	9	11.	12.756	24.	2.5	88.238	9.393	2.5	3.5	22.9	24.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	9	248.	310.222	727.	176.	27117.944	164.675	176.	223.5	327.	727.
00300p	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	9	10.6	10.522	13.7	7.	5.172	2.274	7.	8.5	12.35	13.7
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	9	2.	1.667	3.	1.	0.5	0.707	1.	1.	2.	3.
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	9	11.	13.	22.	5.	30.5	5.523	5.	9.	18.	22.
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	8	7.65	7.712	8.4	7.3	0.116	0.34	**	**	**	**
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	8	7.647	7.619	8.4	7.3	0.126	0.354	**	**	**	**
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	8	0.023	0.024	0.05	0.004	0.	0.015	**	**	**	**
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	9###	2.5	10.056	44.	2.5	201.903	14.209	2.5	2.5	14.5	44.
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	9###	2.5	3.389	6.	1.	3.236	1.799	1.	2.5	5.5	6.
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	9###	2.5	8.056	38.	2.	145.903	12.079	2.	2.5	10.	38.
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	9###	0.05	0.061	0.1	0.05	0.	0.022	0.05	0.05	0.075	0.1
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	9	0.01	0.017	0.04	0.005	0.	0.012	0.005	0.008	0.025	0.04
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	9	1.8	3.073	13.5	0.01	16.416	4.052	0.01	1.05	3.25	13.5
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	9	0.3	0.289	0.5	0.1	0.016	0.127	0.1	0.2	0.4	0.5
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	9	0.1	0.122	0.3	0.05	0.008	0.091	0.05	0.05	0.2	0.3
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	9	0.01	0.012	0.03	0.005	0.	0.008	0.005	0.008	0.015	0.03
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	9	9.	8.778	13.	6.	3.944	1.986	6.	7.5	9.5	13.
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	9	100.	444.444	2500.	50.	654027.778	808.72	50.	50.	550.	2500.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	9	2.	2.175	3.398	1.699	0.386	0.621	1.699	1.699	2.69	3.398
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			149.586								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1981 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	12	15.3	13.333	28.2	0.	93.015	9.644	0.45	2.65	21.7	27.09
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	12	586.	593.75	990.	293.	60525.659	246.02	308.	364.75	819.25	974.4
00300p	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	11	10.	9.791	12.5	7.2	2.865	1.693	7.4	8.4	10.9	12.46
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	11	2.	1.955	3	0.5	0.923	0.961	0.6	1.	3.	3.
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	12	11.5	11.167	18.	4.	17.788	4.218	4.6	7.25	14.	17.4
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	12	7.75	7.817	8.8	6.5	0.412	0.642	6.77	7.5	8.425	8.77
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	12	7.747	7.368	8.8	6.5	0.632	0.795	6.77	7.5	8.425	8.77
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	12	0.018	0.043	0.316	0.002	0.008	0.087	0.002	0.005	0.032	0.233
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	12	7.	11.625	40.	2.5	145.188	12.049	2.5	3.125	15.25	37.3
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	12	2.5	3.083	7.	1.	3.265	1.807	1.	2.125	3.75	6.7
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	12	4.	9.375	33.	2.	121.915	11.042	2.15	2.5	12.	32.4
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	11 ##	0.05	0.05	0.05	0.05	0.	0.	0.05	0.05	0.05	0.05
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	12	0.02	0.027	0.07	0.005	0.	0.021	0.005	0.01	0.048	0.064
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	12	6.25	8.633	19.5	0.5	50.427	7.101	0.59	2.873	15.	19.35
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	12	0.3	0.35	0.7	0.1	0.03	0.173	0.13	0.225	0.475	0.67
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	12 ##	0.05	0.058	0.1	0.05	0.	0.019	0.05	0.05	0.05	0.1
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	12	0.015	0.018	0.04	0.005	0.	0.011	0.005	0.01	0.028	0.037
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	12	9.	10.167	29.	1.	51.061	7.146	1.9	6.25	11.5	25.4
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	11	100.	450.	4000.	50.	1389500.	1178.771	50.	50.	200.	3240.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	11	2.	2.064	3.602	1.699	0.316	0.562	1.699	1.699	2.301	3.342
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			115.756								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1982 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	10	8.75	10.35	24.	2.	52.292	7.231	2.05	4.45	17.175	23.37
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	10	388.5	368.	537.	187.	13472.	116.069	192.2	252.5	462.	532.2
00300p	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	11	11.1	10.691	14.	7.8	4.033	2.008	7.9	8.5	12.2	13.64
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	11	2.	2.364	5.	2.	0.855	0.924	2.	2.	2.	4.6
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	11	14.	15.909	29.	8.	48.491	6.964	8.2	10.	21.	28.2
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	11	7.6	7.445	8.2	6.5	0.249	0.499	6.54	7.2	7.7	8.14
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	11	7.6	7.155	8.2	6.5	0.341	0.584	6.54	7.2	7.7	8.14
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	11	0.025	0.07	0.316	0.006	0.01	0.098	0.008	0.02	0.063	0.293
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	1	7.4	7.4	7.4	7.4	0.	0.	**	**	**	**
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	1	7.4	7.4	7.4	7.4	0.	0.	**	**	**	**
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	1	0.04	0.04	0.04	0.04	0.	0.	**	**	**	**
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	1	33.	33.	33.	33.	0.	0.	**	**	**	**
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	11	5.	18.591	55.	2.5	454.141	21.311	2.5	2.5	42.	52.6
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	11	2.5	4.955	12.	1.	13.123	3.623	1.3	2.5	8.	11.6
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	11	2.5	14.773	49.	2.	308.068	17.552	2.1	2.5	33.	46.
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	11 ##	0.05	0.132	0.4	0.05	0.013	0.112	0.05	0.05	0.2	0.36
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	11	0.02	0.05	0.22	0.005	0.004	0.062	0.006	0.01	0.07	0.192
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	11	1.5	1.897	5.	0.37	1.734	1.317	0.38	1.3	2.78	4.62
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	11	0.4	0.4	0.6	0.1	0.033	0.18	0.12	0.25	0.6	0.6
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	11 ##	0.05	0.095	0.3	0.05	0.007	0.082	0.05	0.05	0.1	0.28
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	11	0.02	0.05	0.2	0.005	0.003	0.058	0.006	0.02	0.07	0.18
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	11	7.	7.	13.	3.	8.4	2.898	3.	4.	8.	12.2
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	1	13.	13.	13.	13.	0.	0.	**	**	**	**
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	11	200.	1118.182	4900.	50.	3048636.364	1746.034	50.	50.	2500.	4660.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	11	2.301	2.451	3.69	1.699	0.603	0.777	1.699	1.699	3.398	3.666
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			282.273								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1983 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	11	17.	13.918	27.2	0.3	93.23	9.656	0.64	6.1	22.5	26.42
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	12	263.	340.833	846.	96.	63911.061	252.806	100.8	152.	568.75	805.5
00300p	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	11	10.1	10.473	14.6	7.1	6.718	2.592	7.24	7.8	11.9	14.56
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	12	2.	2.333	5.	1.	1.152	1.073	1.3	2.	2.	4.7
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	12	16.	18.25	43.	4.	157.477	12.549	4.9	7.25	30.25	40.
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	11	7.5	7.455	8.5	6.2	0.395	0.628	6.34	7.1	7.9	8.44
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	11	7.5	7.02	8.5	6.2	0.602	0.776	6.34	7.1	7.9	8.44
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	11	0.032	0.095	0.631	0.003	0.033	0.181	0.004	0.013	0.079	0.53
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	1	7.7	7.7	7.7	7.7	0.	0.	**	**	**	**
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	1	7.7	7.7	7.7	7.7	0.	0.	**	**	**	**
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	1	0.02	0.02	0.02	0.02	0.	0.	**	**	**	**
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	1	67.	67.	67.	67.	0.	0.	**	**	**	**
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	12	8.	55.25	352.	2.5	10587.205	102.894	2.5	2.5	78.	287.8
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	12	4.	8.75	46.	2.5	154.114	12.414	2.5	2.5	10.5	36.7
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	12	3.25	47.333	306.	0.	8164.333	90.357	0.3	2.5	66.	252.
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	12 ##	0.075	0.117	0.3	0.05	0.007	0.086	0.05	0.05	0.2	0.27
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	12	0.03	0.036	0.08	0.005	0.001	0.03	0.005	0.01	0.06	0.08
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	12	2.7	4.787	20.9	0.49	37.254	6.104	0.568	0.925	4.9	18.5
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	12	0.7	0.946	2.7	0.2	0.668	0.817	0.23	0.425	1.075	2.64
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	12 ##	0.05	0.098	0.23	0.05	0.005	0.07	0.05	0.05	0.175	0.221
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	12	0.03	0.073	0.23	0.01	0.007	0.083	0.01	0.01	0.16	0.221
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	12	6.5	7.75	20.	2.	33.841	5.817	2.3	3.25	9.75	19.4
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	12	200.	1312.5	8000.	50.	5536420.455	2352.96	65.	100.	2000.	6590.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	12	2.301	2.551	3.903	1.699	0.513	0.716	1.789	2.	3.261	3.788
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			355.358								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1984 - Station MANA0001

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	9	14.5	16.133	29.	3.5	86.242	9.287	3.5	7.4	24.5	29.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	9	304.	286.778	475.	149.	10676.694	103.328	149.	177.5	339.	475.
00300p	OXYGEN, DISSOLVED MG/L	9	9.7	9.989	14.	7.7	4.711	2.171	7.7	8.15	11.8	14.
00310p	BOD, 5 DAY, 20 DEG C MG/L	9	1.	1.389	3.	0.5	0.611	0.782	0.5	1.	2.	3.
00340p	COD, .25N K2CR2O7 MG/L	9	12.	11.	16.	3.	13.	3.606	3.	9.5	13.	16.
00400p	PH (STANDARD UNITS)	9	7.08	7.087	7.7	6.6	0.094	0.306	6.6	6.9	7.25	7.7
00400p	CONVERTED PH (STANDARD UNITS)	9	7.08	7.001	7.7	6.6	0.102	0.319	6.6	6.9	7.25	7.7
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	9	0.083	0.1	0.251	0.02	0.004	0.066	0.02	0.057	0.126	0.251
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	9	8.	15.611	56.	2.5	265.861	16.305	2.5	6.5	19.	56.
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	9	5.	4.278	7.	2.	3.694	1.922	2.	2.25	6.	7.
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	9	6.	11.611	54.	0.	286.111	16.915	0.	1.5	15.	54.
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	9 ##	0.05	0.056	0.1	0.05	0.	0.017	0.05	0.05	0.05	0.1
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	9	0.02	0.023	0.05	0.005	0.	0.019	0.005	0.008	0.045	0.05
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	9	3.	3.961	12.	0.84	13.25	3.64	0.84	1.15	5.83	12.
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	9	0.4	0.411	0.5	0.3	0.009	0.093	0.3	0.3	0.5	0.5
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	9 ##	0.05	0.061	0.1	0.05	0.	0.022	0.05	0.05	0.075	0.1
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	9	0.02	0.027	0.05	0.005	0.	0.016	0.005	0.015	0.045	0.05
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	9	6.	6.111	8.	4.	1.611	1.269	4.	5.	7.	8.
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	9	200.	344.444	900.	50.	99652.778	315.678	50.	75.	600.	900.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	9	2.301	2.34	2.954	1.699	0.222	0.471	1.699	1.849	2.753	2.954
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C			GEOMETRIC MEAN =								
				218.857								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1985 - Station MANA0001

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	11	14.5	14.464	25.	0.5	85.147	9.227	0.8	5.8	24.	24.8
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	11	319.	616.636	3370.	116.	872836.455	934.257	119.2	143.	614.	2838.2
00300p	OXYGEN, DISSOLVED MG/L	11	8.7	9.691	14.	6.2	6.367	2.523	6.32	8.	12.2	13.66
00310p	BOD, 5 DAY, 20 DEG C MG/L	11	2.	1.636	3.	1.	0.455	0.674	1.	1.	2.	2.8
00340p	COD, .25N K2CR2O7 MG/L	11	11.	13.909	33.	6.	70.091	8.372	6.2	9.	17.	31.4
00400p	PH (STANDARD UNITS)	11	7.1	7.145	7.8	6.2	0.219	0.468	6.32	6.8	7.6	7.78
00400p	CONVERTED PH (STANDARD UNITS)	11	7.1	6.898	7.8	6.2	0.286	0.535	6.32	6.8	7.6	7.78
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	11	0.079	0.126	0.631	0.016	0.031	0.175	0.017	0.025	0.158	0.536
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	11	6.	21.545	132.	2.5	1435.373	37.886	2.5	2.5	22.	111.8
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	11	2.5	4.818	13.	1.	13.864	3.723	1.	2.5	7.	12.
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	11	5.	17.636	119.	2.5	1175.955	34.292	2.5	2.5	16.	99.8
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10 ##	0.05	0.165	1.1	0.05	0.108	0.329	0.05	0.05	0.1	1.
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	10	0.01	0.043	0.23	0.005	0.005	0.07	0.005	0.005	0.063	0.214
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	10	3.02	3.942	14.44	0.025	16.756	4.093	0.135	1.218	4.858	13.589
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	9	0.4	0.444	1.	0.2	0.073	0.27	0.2	0.2	0.6	1.
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	9 ##	0.05	0.094	0.2	0.05	0.004	0.063	0.05	0.05	0.15	0.2
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	10	0.015	0.026	0.11	0.01	0.001	0.031	0.01	0.01	0.03	0.102
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	11	5.	5.727	11.	3.	5.018	2.24	3.2	4.	7.	10.2
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	9 ##	50.	527.778	3800.	50.	1526944.444	1235.696	50.	50.	300.	3800.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	9 ##	1.699	2.086	3.58	1.699	0.421	0.649	1.699	1.699	2.349	3.58
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C			GEOMETRIC MEAN =								
				121.887								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1986 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	9	16.	15.267	26.	1.2	63.63	7.977	1.2	9.1	21.5	26.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	9	507.	516.444	752.	314.	21604.778	146.986	314.	398.5	652.	752.
00300p	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	9	9.6	10.011	14.3	7.7	5.296	2.301	7.7	8.1	11.7	14.3
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	9	1.	1.222	2.	1.	0.194	0.441	1.	1.	1.5	2.
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	8	10.5	10.5	14.	9.	2.857	1.69	**	**	**	**
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	9	7.4	7.317	7.8	6.8	0.109	0.33	6.8	6.975	7.55	7.8
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	9	7.4	7.204	7.8	6.8	0.123	0.351	6.8	6.975	7.55	7.8
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	9	0.04	0.063	0.158	0.016	0.002	0.049	0.016	0.028	0.106	0.158
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	7	7.2	7.1	7.4	6.7	0.06	0.245	**	**	**	**
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	7	7.2	7.038	7.4	6.7	0.065	0.254	**	**	**	**
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	7	0.063	0.092	0.2	0.04	0.003	0.056	**	**	**	**
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	7	60.	59.571	88.	37.	279.619	16.722	**	**	**	**
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	9##	2.5	7.722	25.	2.5	67.944	8.243	2.5	2.5	13.	25.
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	9##	2.5	2.944	5.	2.	0.903	0.95	2.	2.5	3.5	5.
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	9##	2.5	6.167	23.	2.5	54.	7.348	2.5	2.5	8.5	23.
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	9##	0.05	0.056	0.1	0.05	0.	0.017	0.05	0.05	0.05	0.1
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	9	0.04	0.042	0.09	0.005	0.001	0.03	0.005	0.013	0.07	0.09
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	9	9.45	9.336	19.4	0.87	37.155	6.095	0.87	3.75	13.795	19.4
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	9	0.6	0.528	0.8	0.05	0.053	0.231	0.05	0.4	0.7	0.8
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	9##	0.05	0.072	0.2	0.05	0.003	0.051	0.05	0.05	0.075	0.2
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	9	0.02	0.031	0.1	0.005	0.001	0.035	0.005	0.01	0.05	0.1
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	9	6.	5.889	8.	4.	1.111	1.054	4.	5.5	6.	8.
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	9	200.	327.778	1700.	50.	277569.444	526.849	50.	50.	300.	1700.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	9	2.301	2.204	3.23	1.699	0.256	0.506	1.699	1.699	2.452	3.23
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			159.813								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1987 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	9	12.3	15.911	32.	4.6	104.129	10.204	4.6	6.	25.85	32.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	9	392.	362.111	689.	21.	51410.111	226.738	21.	169.	583.	689.
00300p	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	9	9.9	9.822	12.6	7.4	3.802	1.95	7.4	8.	11.8	12.6
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	9	1.	1.556	3.	1.	0.528	0.726	1.	1.	2.	3.
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	9	14.	13.778	26.	3.	59.194	7.694	3.	8.	20.5	26.
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	9	7.9	7.851	8.61	6.7	0.291	0.539	6.7	7.6	8.175	8.61
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	9	7.9	7.472	8.61	6.7	0.452	0.672	6.7	7.6	8.175	8.61
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	9	0.013	0.034	0.2	0.002	0.004	0.063	0.002	0.007	0.026	0.2
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	9	7.3	7.2	7.5	6.6	0.11	0.332	6.6	6.9	7.5	7.5
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	9	7.3	7.075	7.5	6.6	0.128	0.357	6.6	6.9	7.5	7.5
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	9	0.05	0.084	0.251	0.032	0.006	0.075	0.032	0.032	0.129	0.251
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	9	52.	55.222	79.	30.	291.944	17.086	30.	41.	70.	79.
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	9	8.	7.889	21.	2.5	40.486	6.363	2.5	2.5	12.	21.
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	8 ##	2.5	3.25	8.	1.	4.357	2.087	**	**	**	**
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	9 ##	2.5	6.389	20.	2.5	37.611	6.133	2.5	2.5	10.5	20.
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	9 ##	0.05	0.05	0.05	0.05	0.	0.	0.05	0.05	0.05	0.05
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	9	0.03	0.028	0.07	0.005	0.	0.019	0.005	0.015	0.035	0.07
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	9	5.72	6.342	16.18	0.88	23.998	4.899	0.88	1.685	9.235	16.18
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	8	0.7	0.663	0.8	0.5	0.014	0.119	**	**	**	**
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	9	0.1	0.078	0.1	0.05	0.001	0.026	0.05	0.05	0.1	0.1
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	9	0.02	0.027	0.07	0.005	0.	0.021	0.005	0.008	0.04	0.07
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	5	5.	6.4	9.	5.	3.8	1.949	**	**	**	**
00900p	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	6	113.	117.667	148.	80.	637.467	25.248	**	**	**	**
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	8 ##	75.	425.	1800.	50.	437857.143	661.708	**	**	**	**
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	8 ##	1.849	2.174	3.255	1.699	0.41	0.64	**	**	**	**
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			149.347								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1988 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	11	19.6	17.318	28.	1.3	79.246	8.902	2.46	9.5	26.8	27.9
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	10	535.	493.4	924.	100.	53593.6	231.503	116.9	327.5	616.5	896.7
00300p	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	11	8.2	9.582	14.1	7.7	5.584	2.363	7.72	7.8	11.5	13.82
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	10	1.5	2.15	5.	0.5	2.336	1.528	0.55	1.	3.25	4.9
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	10	11.5	13.5	36.	5.	82.056	9.058	5.	7.25	16.75	34.3
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	11	8.1	8.162	9.	7.6	0.218	0.467	7.62	7.8	8.7	8.956
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	11	8.1	7.988	9.	7.6	0.251	0.501	7.62	7.8	8.7	8.956
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	11	0.008	0.01	0.025	0.001	0.	0.008	0.001	0.002	0.016	0.024
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	10	7.75	7.65	8.2	6.8	0.174	0.417	6.84	7.35	7.925	8.18
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	10	7.747	7.439	8.2	6.8	0.223	0.473	6.84	7.35	7.925	8.18
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	10	0.018	0.036	0.158	0.006	0.002	0.046	0.007	0.012	0.046	0.149
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	10	66.	74.8	141.	27.	1113.289	33.366	29.4	51.75	103.75	137.8
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	1	361.	361.	361.	361.	0.	0.	**	**	**	**
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	1	57.	57.	57.	57.	0.	0.	**	**	**	**
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	1	304.	304.	304.	304.	0.	0.	**	**	**	**
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	10	7.5	13.8	77.	2.	505.956	22.493	2.1	3.	12.	70.5
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	10	4.	4.1	8.	0.5	7.822	2.797	0.5	1.625	7.25	8.
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	10	3.	9.7	69.	0.	440.678	20.992	0.1	1.	6.	63.
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	10	0.125	0.379	1.26	0.02	0.227	0.476	0.022	0.04	0.693	1.252
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	9	0.05	0.089	0.25	0.01	0.007	0.084	0.01	0.025	0.155	0.25
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	10	7.045	6.22	12.4	0.44	17.779	4.217	0.493	1.743	10.265	12.206
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	10	1.15	1.07	1.7	0.5	0.18	0.424	0.51	0.675	1.5	1.68
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	10	0.1	0.115	0.2	0.05	0.002	0.047	0.055	0.1	0.125	0.2
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	10	0.01	0.026	0.13	0.005	0.001	0.037	0.006	0.01	0.023	0.12
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	8	4.15	5.163	12.	3.8	7.717	2.778	**	**	**	**
00900p	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	12	139.	142.167	260.	37.	3620.152	60.168	50.5	100.5	185.75	238.4
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	2	87.5	87.5	104.	71.	544.5	23.335	**	**	**	**
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	1	94.	94.	94.	94.	0.	0.	**	**	**	**
00951	FLUORIDE, TOTAL (MG/L AS F)	11/15/88-04/15/93	1	0.39	0.39	0.39	0.39	0.	0.	**	**	**	**
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	6 ##	50.	58.333	100.	50.	416.667	20.412	**	**	**	**
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	6 ##	1.699	1.749	2.	1.699	0.015	0.123	**	**	**	**
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			56.123								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1989 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	11	9.8	11.6	24.4	2.2	67.098	8.191	2.3	3.4	20.2	24.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	9	386.	353.444	530.	140.	15388.028	124.048	140.	245.5	443.5	530.
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	3	492.	558.667	714.	470.	18217.333	134.972	**	**	**	**
00300p	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	11	10.7	10.818	14.1	7.4	6.022	2.454	7.48	8.8	13.5	14.
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	12	2.	2.	6.	1.	2.	1.414	1.	1.	2.	5.1
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	12	16.	15.917	23.	6.	27.538	5.248	7.5	12.	21.	23.
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	9	7.8	7.778	8.	7.4	0.027	0.164	7.4	7.75	7.85	8.
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	9	7.8	7.746	8.	7.4	0.028	0.168	7.4	7.75	7.85	8.
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	9	0.016	0.018	0.04	0.01	0.	0.009	0.01	0.014	0.018	0.04
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	12	7.45	7.45	8.	7.1	0.072	0.268	7.1	7.225	7.6	7.91
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	12	7.447	7.381	8.	7.1	0.077	0.277	7.1	7.225	7.6	7.91
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	12	0.036	0.042	0.079	0.01	0.001	0.023	0.013	0.025	0.06	0.079
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	12	68.	64.583	86.	41.	319.72	17.881	41.3	44.5	83.75	85.4
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	11	275.	288.545	443.	155.	6859.673	82.823	165.	225.	338.	432.6
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	11	57.	59.727	90.	33.	330.618	18.183	33.8	47.	74.	89.
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	11	228.	228.818	391.	122.	6321.364	79.507	127.2	160.	271.	376.2
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	12	4.5	27.625	272.	0.5	5933.415	77.029	1.25	3.25	8.75	194.3
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	12	2.	4.292	28.	0.5	57.839	7.605	0.65	1.	4.	21.1
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	12	2.5	23.417	244.	0.5	4832.765	69.518	0.5	2.	7.25	173.5

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot



### Annual Analysis for 1989 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	11 ##	0.02	0.037	0.12	0.005	0.001	0.031	0.008	0.02	0.05	0.106
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	11	0.02	0.026	0.1	0.005	0.001	0.028	0.006	0.01	0.03	0.09
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	11	5.48	4.756	10.1	0.02	14.401	3.795	0.04	0.51	8.39	9.904
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	11	0.5	0.605	1.2	0.05	0.1	0.317	0.1	0.5	0.8	1.16
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	11 ##	0.05	0.082	0.3	0.05	0.006	0.075	0.05	0.05	0.1	0.26
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	11	0.02	0.037	0.23	0.005	0.004	0.065	0.005	0.005	0.04	0.192
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	12	4.5	4.667	8.8	3.	2.757	1.66	3.03	3.45	5.225	8.14
00900p	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	12	122.	116.167	178.	48.	1376.333	37.099	53.4	89.5	143.5	169.
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	10	44.5	39.4	66.	8.	350.044	18.709	8.6	20.	52.25	64.7
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	10	45.5	44.8	89.	13.	448.178	21.17	14.2	29.5	56.	86.
00951	FLUORIDE, TOTAL (MG/L AS F)	11/15/88-04/15/93	11	0.2	0.255	0.59	0.12	0.021	0.146	0.122	0.13	0.36	0.546
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	2 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	2 ##	1.699	1.699	1.699	1.699	0.	0.	**	**	**	**
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			50.								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1990 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	12	13.85	14.442	24.8	0.4	59.852	7.736	1.75	9.175	22.35	24.53
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	2	484.	484.	605.	363.	29282.	171.12	**	**	**	**
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	10	410.5	407.9	613.	175.	19906.1	141.089	184.6	292.75	528.	610.8
00300p	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	12	10.3	10.75	14.4	8.2	4.068	2.017	8.29	8.95	12.35	14.22
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	11	2.	1.727	3.	1.	0.618	0.786	1.	1.	2.	3.
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	12	14.	14.667	31.	7.	48.424	6.959	7.3	9.	18.	28.6
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	6	7.3	7.333	7.8	7.	0.083	0.288	**	**	**	**
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	6	7.3	7.263	7.8	7.	0.089	0.298	**	**	**	**
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	6	0.05	0.055	0.1	0.016	0.001	0.031	**	**	**	**
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	11	7.3	7.445	8.	6.8	0.163	0.403	6.84	7.2	7.9	8.
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	11	7.3	7.29	8.	6.8	0.189	0.435	6.84	7.2	7.9	8.
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	11	0.05	0.051	0.158	0.01	0.002	0.045	0.01	0.013	0.063	0.147
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	11	70.	67.727	89.	37.	326.018	18.056	39.	51.	86.	88.8
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	12	248.	264.583	411.	168.	6235.538	78.965	173.7	201.25	307.5	407.7
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	12	59.	58.5	75.	33.	132.818	11.525	37.8	51.25	65.5	74.7
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	12	191.5	206.083	336.	121.	4986.629	70.616	125.2	149.25	245.5	333.
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	12	4.5	9.375	58.	0.5	248.324	15.758	0.65	1.5	9.75	44.2
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	12	2.	2.875	10.	0.5	7.688	2.773	0.5	0.625	3.75	8.8
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	12	1.5	6.708	48.	0.5	176.703	13.293	0.5	0.625	6.	36.
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	12 ##	0.03	0.035	0.06	0.02	0.	0.017	0.02	0.02	0.055	0.06
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	12	0.02	0.021	0.06	0.005	0.	0.014	0.007	0.01	0.028	0.051
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	12	4.79	6.052	13.27	0.37	21.745	4.663	0.406	2.003	11.025	12.82
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	11	0.6	0.6	1.	0.4	0.05	0.224	0.4	0.4	0.7	1.
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	12 ##	0.075	0.083	0.2	0.05	0.002	0.044	0.05	0.05	0.1	0.17
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	11	0.01	0.023	0.1	0.005	0.001	0.028	0.005	0.005	0.03	0.088
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	12	4.5	4.425	6.1	1.7	1.897	1.377	2.09	3.425	5.8	6.1
00900p	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	12	124.	123.417	178.	60.	1587.356	39.842	63.	93.25	161.5	175.
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	12	41.5	41.917	69.	14.	301.538	17.365	16.7	25.25	56.75	67.5
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	11	52.	49.	74.	18.	337.6	18.374	20.4	33.	65.	73.6
00951	FLUORIDE, TOTAL (MG/L AS F)	11/15/88-04/15/93	11	0.29	0.331	0.86	0.05	0.064	0.252	0.05	0.05	0.52	0.808

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1991 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	10	12.1	14.12	24.4	3.6	50.246	7.088	3.99	7.95	20.925	24.27
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	9	276.	549.778	2840.	118.	748836.694	865.354	118.	171.5	420.	2840.
00300p	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	9	9.6	8.467	12.9	0.5	12.998	3.605	0.5	7.05	11.	12.9
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	10	1.5	1.65	4.	0.5	1.003	1.001	0.55	1.	2.	3.8
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	10	21.	19.9	29.	11.	35.878	5.99	11.1	14.25	25.	28.6
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	10	7.05	7.2	8.1	6.7	0.216	0.464	6.7	6.85	7.575	8.07
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	10	7.047	7.035	8.1	6.7	0.246	0.496	6.7	6.85	7.575	8.07
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	10	0.09	0.092	0.2	0.008	0.005	0.068	0.009	0.028	0.144	0.2
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	10	7.45	7.41	7.9	6.7	0.139	0.373	6.72	7.2	7.65	7.89
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	10	7.447	7.248	7.9	6.7	0.168	0.41	6.72	7.2	7.65	7.89
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	10	0.036	0.057	0.2	0.013	0.004	0.06	0.013	0.023	0.069	0.192
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	10	51.	50.1	81.	24.	311.211	17.641	24.8	37.25	58.	80.5
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	9	187.	232.333	640.	87.	28130.25	167.721	87.	117.	280.	640.
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	10	43.	73.1	208.	25.	4540.322	67.382	25.1	36.5	91.	206.2
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	10	146.	169.6	450.	62.	12676.267	112.589	62.6	92.	219.	427.8
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	10 ###	2.75	12.65	85.	1.5	662.003	25.729	1.5	1.5	10.75	77.8
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	10 ###	2.	2.65	11.	0.5	9.003	3.	0.55	1.375	2.5	10.15
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	10 ###	2.5	10.85	74.	1.	503.225	22.433	1.05	1.5	8.75	67.7
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	10 ###	0.02	0.061	0.29	0.02	0.007	0.084	0.02	0.02	0.08	0.269
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	10 ###	0.005	0.016	0.05	0.005	0.	0.019	0.005	0.005	0.028	0.05
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	10	1.685	3.523	18.45	0.02	30.066	5.483	0.058	0.505	3.905	17.105
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	10	0.65	0.63	1.3	0.2	0.082	0.287	0.22	0.475	0.7	1.24
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	10 ###	0.05	0.105	0.3	0.05	0.009	0.093	0.05	0.05	0.2	0.29
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	10	0.02	0.048	0.14	0.01	0.003	0.05	0.01	0.01	0.098	0.138
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	10	4.2	4.79	7.6	2.3	3.319	1.822	2.36	3.425	6.425	7.55
00900p	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	10	86.	99.6	220.	46.	2707.378	52.032	47.6	63.5	134.5	212.2
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	10	21.	24.5	74.	8.	409.167	20.228	8.	8.75	33.25	70.3
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	10	32.	40.9	97.	12.	915.433	30.256	12.5	17.	65.	96.2
00951	FLUORIDE, TOTAL (MG/L AS F)	11/15/88-04/15/93	9	0.17	0.239	0.65	0.05	0.038	0.195	0.05	0.085	0.37	0.65
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	3	1100.	2213.333	5400.	140.	7846533.333	2801.166	**	**	**	**
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	3	3.041	2.973	3.732	2.146	0.633	0.795	**	**	**	**
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			940.383								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1992 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	10	13.9	14.29	24.9	4.7	53.752	7.332	4.79	6.875	20.475	24.87
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	10	233.	273.7	468.	137.	14011.789	118.371	137.7	168.75	396.	462.6
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	10	210.5	257.5	450.	90.	17946.5	133.965	95.3	149.75	413.	448.1
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	10	2.	1.8	3.	1.	0.622	0.789	1.	1.	2.25	3.
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	11	16.	15.136	22.	0.5	34.405	5.866	2.6	14.	18.	22.
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	10	7.4	7.39	7.9	6.8	0.103	0.321	6.83	7.175	7.575	7.89
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	10	7.4	7.282	7.9	6.8	0.116	0.341	6.83	7.175	7.575	7.89
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	10	0.04	0.052	0.158	0.013	0.002	0.042	0.013	0.028	0.067	0.151
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	10	7.5	7.55	8.1	7.1	0.103	0.321	7.11	7.275	7.775	8.09
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	10	7.5	7.455	8.1	7.1	0.113	0.336	7.11	7.275	7.775	8.09
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	10	0.032	0.035	0.079	0.008	0.001	0.023	0.008	0.017	0.053	0.078
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	10	53.	48.8	68.	18.	310.178	17.612	19.3	32.5	65.	67.7
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	10	158.	183.2	316.	95.	7132.4	84.454	96.2	108.5	275.	313.4
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	10	39.	49.9	94.	28.	498.767	22.333	28.1	33.5	66.	92.4
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	10	122.	133.3	222.	67.	4123.122	64.212	67.1	72.5	212.	221.
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	10	3.5	7.2	25.	1.5	67.9	8.24	1.5	1.875	11.5	24.4
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	10	1.25	2.	5.	1.	2.167	1.472	1.	1.	3.25	4.9
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	10	2.5	5.5	20.	1.	46.	6.782	1.	1.375	7.75	19.6
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	11 ##	0.02	0.044	0.18	0.02	0.002	0.048	0.02	0.02	0.06	0.156

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1992 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	11	0.01	0.015	0.04	0.005	0.	0.012	0.005	0.005	0.02	0.038
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	11	0.84	2.584	7.09	0.06	8.294	2.88	0.068	0.23	6.13	7.05
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	11	0.6	0.527	0.8	0.3	0.034	0.185	0.3	0.3	0.6	0.8
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	11 ##	0.05	0.073	0.1	0.05	0.001	0.026	0.05	0.05	0.1	0.1
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	5	0.01	0.013	0.03	0.005	0.	0.01	**	**	**	**
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	11	4.5	4.527	9.2	0.5	6.29	2.508	0.88	2.7	6.9	8.82
00900p	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	11	70.	82.091	128.	31.	1032.891	32.139	34.4	64.	116.	128.
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	10	15.	19.4	42.	5.	192.933	13.89	5.2	7.75	34.	41.5
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	10	23.	28.6	55.	11.	282.489	16.807	11.2	13.75	47.75	54.5
00951	FLUORIDE, TOTAL (MG/L AS F)	11/15/88-04/15/93	9 ##	0.25	0.211	0.41	0.05	0.015	0.12	0.05	0.1	0.295	0.41
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	11	100.	146.909	490.	9.	21208.091	145.63	9.	50.	200.	452.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	11	2.	1.914	2.69	0.954	0.322	0.568	0.954	1.699	2.301	2.648
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			82.043								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1993 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	9	15.9	16.744	28.2	6.1	59.208	7.695	6.1	9.65	23.45	28.2
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	9	306.	394.889	694.	130.	41473.861	203.651	130.	234.5	608.5	694.
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	10	267.	361.1	672.	183.	32056.322	179.043	183.5	234.5	535.	666.4
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	10	2.	2.1	3.	1.	0.767	0.876	1.	1.	3.	3.
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	10	13.5	16.	42.	10.	87.111	9.333	10.1	11.75	14.75	39.5
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	9	7.5	7.444	8.1	6.8	0.168	0.41	6.8	7.1	7.75	8.1
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	9	7.5	7.28	8.1	6.8	0.198	0.445	6.8	7.1	7.75	8.1
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	9	0.032	0.052	0.158	0.008	0.002	0.049	0.008	0.018	0.082	0.158
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	10	7.5	7.54	8.2	7.	0.107	0.327	7.03	7.375	7.8	8.16
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	10	7.5	7.441	8.2	7.	0.118	0.344	7.03	7.375	7.8	8.16
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	10	0.032	0.036	0.1	0.006	0.001	0.026	0.007	0.016	0.042	0.095
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	10	55.	55.4	83.	36.	184.489	13.583	36.5	44.	64.	81.4
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	10	209.5	255.9	460.	113.	13162.322	114.727	118.3	172.75	358.25	455.
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	10	56.	58.5	94.	21.	883.611	29.726	21.2	27.5	91.5	93.9
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	10	175.5	196.6	366.	82.	9039.378	95.076	82.8	125.25	268.	361.6
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	10	11.	12.35	33.	1.5	97.892	9.894	1.65	3.75	19.25	32.
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	10	4.	3.55	8.	1.	4.469	2.114	1.	1.375	4.25	7.7
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	10	6.	9.1	28.	1.5	78.044	8.834	1.5	1.875	16.	27.1
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	10 ##	0.02	0.056	0.16	0.02	0.003	0.054	0.02	0.02	0.095	0.158
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	10	0.02	0.025	0.06	0.005	0.	0.018	0.005	0.009	0.04	0.058
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	10	3.38	5.961	15.64	0.67	28.745	5.361	0.801	2.393	9.735	15.576
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	10	0.6	0.665	1.1	0.05	0.096	0.309	0.095	0.5	1.	1.09
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	10 ##	0.075	0.075	0.1	0.05	0.001	0.026	0.05	0.05	0.1	0.1
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	10	5.05	6.02	12.7	3.6	7.526	2.743	3.63	4.05	7.05	12.24
00900p	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	10	90.	101.3	160.	43.	1540.9	39.254	44.9	74.	136.	158.8
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	10	20.5	31.1	80.	0.	827.878	28.773	0.7	7.75	55.5	79.8
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	10	46.	56.9	173.	0.	2389.433	48.882	2.	24.5	76.5	163.8
00951	FLUORIDE, TOTAL (MG/L AS F)	11/15/88-04/15/93	2 ##	0.2	0.2	0.25	0.15	0.005	0.071	**	**	**	**
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	9	100.	1211.111	4300.	50.	2852986.111	1689.078	50.	75.	2950.	4300.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	9	2.	2.494	3.633	1.699	0.65	0.806	1.699	1.849	3.47	3.633
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			312.052								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1994 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	6	20.8	18.25	26.9	4.4	62.851	7.928	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	6	279.	263.333	380.	130.	8252.267	90.842	**	**	**	**
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	6	265.	241.167	334.	114.	7152.167	84.57	**	**	**	**
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	6	1.95	1.967	3.7	0.5	1.119	1.058	**	**	**	**
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	6	17.5	19.	35.	12.	69.2	8.319	**	**	**	**
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	6	7.45	7.383	7.7	6.8	0.126	0.354	**	**	**	**
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	6	7.425	7.251	7.7	6.8	0.147	0.383	**	**	**	**
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	6	0.038	0.056	0.158	0.02	0.003	0.053	**	**	**	**
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	6	7.15	7.133	7.3	7.	0.015	0.121	**	**	**	**
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	6	7.147	7.119	7.3	7.	0.015	0.122	**	**	**	**
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	6	0.071	0.076	0.1	0.05	0.	0.021	**	**	**	**
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	6	51.5	48.833	61.	28.	134.967	11.618	**	**	**	**
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	6	169.5	173.5	235.	106.	2340.3	48.377	**	**	**	**
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	6	42.5	40.5	58.	21.	193.1	13.896	**	**	**	**
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	6	137.	133.	177.	78.	1620.	40.249	**	**	**	**
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	6	19.	22.583	58.	1.5	384.042	19.597	**	**	**	**
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	6	3.	3.667	9.	1.5	8.167	2.858	**	**	**	**
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	6	16.	19.083	49.	1.5	272.842	16.518	**	**	**	**
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	6	0.06	0.053	0.08	0.02	0.001	0.027	**	**	**	**
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	6	0.03	0.038	0.08	0.02	0.001	0.024	**	**	**	**
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	6	2.915	2.725	5.13	0.28	4.786	2.188	**	**	**	**
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	6	0.75	0.667	0.9	0.2	0.063	0.25	**	**	**	**
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	6	0.1	0.117	0.2	0.05	0.005	0.068	**	**	**	**
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	6	5.4	5.3	6.9	4.	1.048	1.024	**	**	**	**
00900p	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	6	83.	77.5	97.	42.	440.7	20.993	**	**	**	**
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	6	22.	21.333	36.	10.	87.067	9.331	**	**	**	**
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	6	26.5	24.833	32.	9.	70.167	8.377	**	**	**	**
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	6	700.	2000.	8000.	100.	9268000.	3044.339	**	**	**	**
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	6	2.841	2.875	3.903	2.	0.48	0.693	**	**	**	**
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			749.057								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1995 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	5	21.6	19.32	29.	6.9	78.167	8.841	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	5	525.	498.8	704.	272.	33571.7	183.226	**	**	**	**
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	6	470.	489.167	712.	275.	30411.367	174.389	**	**	**	**
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	6	1.3	1.45	2.1	1.	0.271	0.521	**	**	**	**
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	6	14.5	16.167	29.	10.	48.567	6.969	**	**	**	**
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	5	7.3	7.52	8.3	7.2	0.202	0.449	**	**	**	**
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	5	7.3	7.398	8.3	7.2	0.221	0.47	**	**	**	**
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	5	0.05	0.04	0.063	0.005	0.001	0.023	**	**	**	**
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	6	7.45	7.367	7.9	6.7	0.199	0.446	**	**	**	**
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	6	7.447	7.172	7.9	6.7	0.244	0.494	**	**	**	**
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	6	0.036	0.067	0.2	0.013	0.005	0.072	**	**	**	**
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	6	65.	59.5	71.	41.	183.1	13.531	**	**	**	**
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	6	279.	313.333	475.	193.	12663.467	112.532	**	**	**	**
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	6	57.	80.667	140.	35.	2181.467	46.706	**	**	**	**
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	6	230.5	232.667	335.	138.	5912.267	76.891	**	**	**	**
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	6	4.5	8.	16.	4.	34.	5.831	**	**	**	**
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	6##	1.5	1.75	3.	1.5	0.375	0.612	**	**	**	**
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	6	3.5	6.167	14.	1.5	33.267	5.768	**	**	**	**
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	6##	0.035	0.038	0.06	0.02	0.	0.02	**	**	**	**
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	6	0.025	0.038	0.1	0.02	0.001	0.031	**	**	**	**
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	6	6.535	8.908	16.7	3.08	35.26	5.938	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1995 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	6	0.5	0.45	0.8	0.1	0.055	0.235	**	**	**	**
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	6 ##	0.05	0.067	0.1	0.05	0.001	0.026	**	**	**	**
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	6	6.8	6.467	8.3	4.2	2.175	1.475	**	**	**	**
00900p	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	6	138.	131.167	178.	74.	1562.567	39.529	**	**	**	**
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	6	46.5	46.667	67.	24.	278.667	16.693	**	**	**	**
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	6	55.5	52.833	76.	24.	502.167	22.409	**	**	**	**
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	6 ##	75.	191.667	700.	50.	65416.667	255.767	**	**	**	**
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	6 ##	1.849	2.041	2.845	1.699	0.213	0.462	**	**	**	**
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			109.776								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

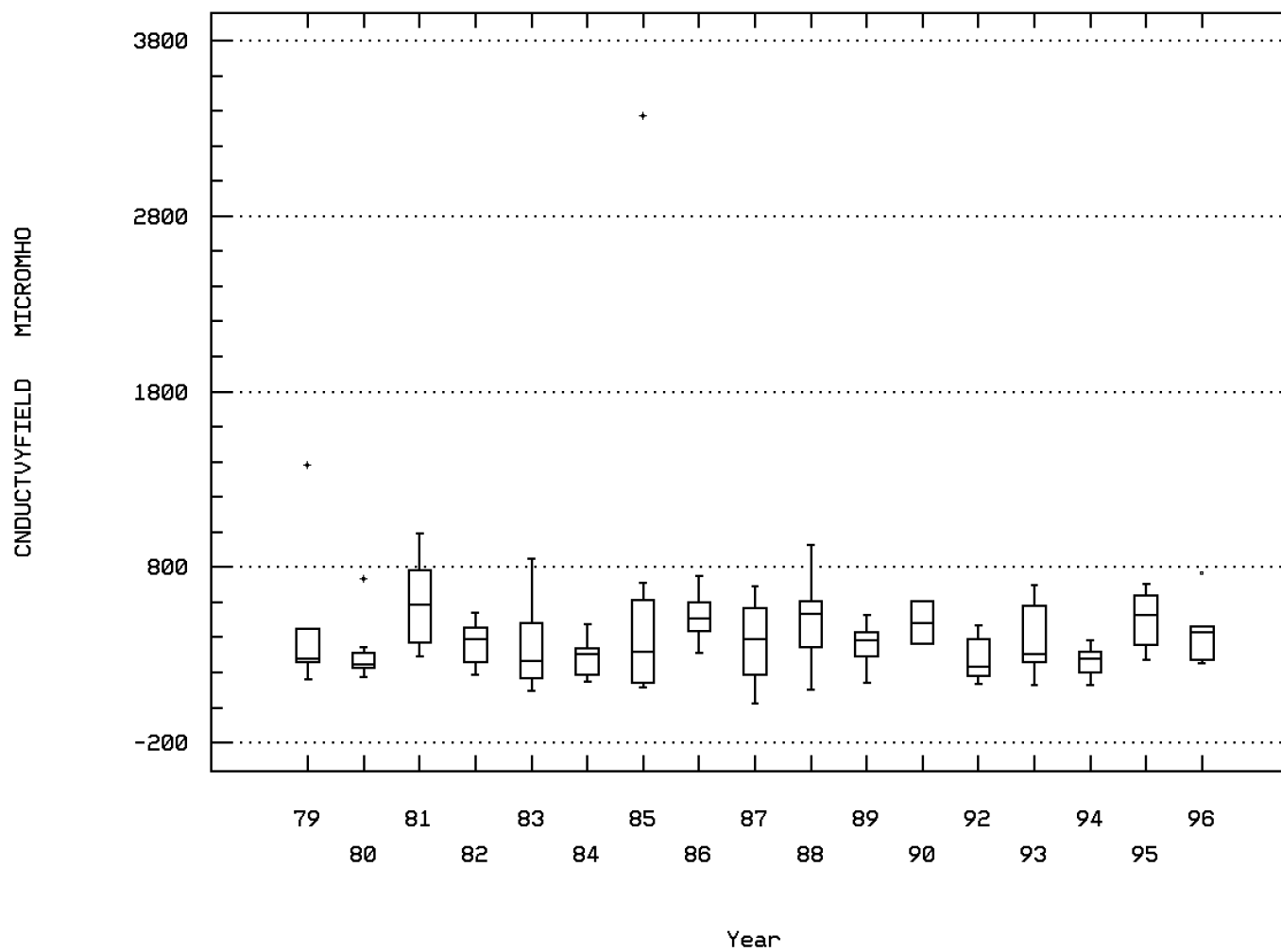
### Annual Analysis for 1996 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	7	11.1	12.543	26.6	2.7	81.336	9.019	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	7	430.	434.	766.	251.	28562.333	169.004	**	**	**	**
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	6	427.	436.5	778.	255.	35436.7	188.246	**	**	**	**
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	6###	1.25	1.25	2.	0.5	0.675	0.822	**	**	**	**
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	6	14.5	14.5	21.	8.	22.7	4.764	**	**	**	**
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	6	7.15	7.133	7.7	6.5	0.203	0.45	**	**	**	**
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	6	7.125	6.948	7.7	6.5	0.244	0.494	**	**	**	**
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	6	0.075	0.113	0.316	0.02	0.013	0.112	**	**	**	**
00403p	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	6	7.4	7.4	7.7	7.2	0.036	0.19	**	**	**	**
00403p	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	6	7.4	7.368	7.7	7.2	0.037	0.193	**	**	**	**
00403p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	6	0.04	0.043	0.063	0.02	0.	0.017	**	**	**	**
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	6	54.5	52.	59.	38.	66.4	8.149	**	**	**	**
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	6	276.	275.167	437.	171.	8517.767	92.292	**	**	**	**
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	6	50.5	55.667	96.	27.	528.667	22.993	**	**	**	**
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	6	220.5	219.5	341.	144.	4996.3	70.685	**	**	**	**
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	6	12.5	10.833	17.	4.	23.767	4.875	**	**	**	**
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	6###	1.5	1.5	1.5	1.5	0.	0.	**	**	**	**
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	6	11.	9.333	15.	3.	19.867	4.457	**	**	**	**
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	7	0.04	0.037	0.06	0.02	0.	0.017	**	**	**	**
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	7	0.01	0.015	0.03	0.005	0.	0.009	**	**	**	**
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	7	2.8	3.293	6.81	0.61	4.687	2.165	**	**	**	**
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	7	0.5	0.529	0.7	0.3	0.022	0.15	**	**	**	**
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	7###	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	6	5.05	4.717	5.6	3.7	0.67	0.818	**	**	**	**
00900p	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	6	116.	113.333	165.	75.	1102.267	33.2	**	**	**	**
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	6	43.	65.	168.	31.	2778.8	52.714	**	**	**	**
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	6	38.	34.667	47.	21.	123.867	11.13	**	**	**	**
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	6###	175.	241.667	600.	50.	53416.667	231.12	**	**	**	**
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	6###	2.088	2.159	2.778	1.699	0.263	0.513	**	**	**	**
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			144.225								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0001 Parameter Code: 00094

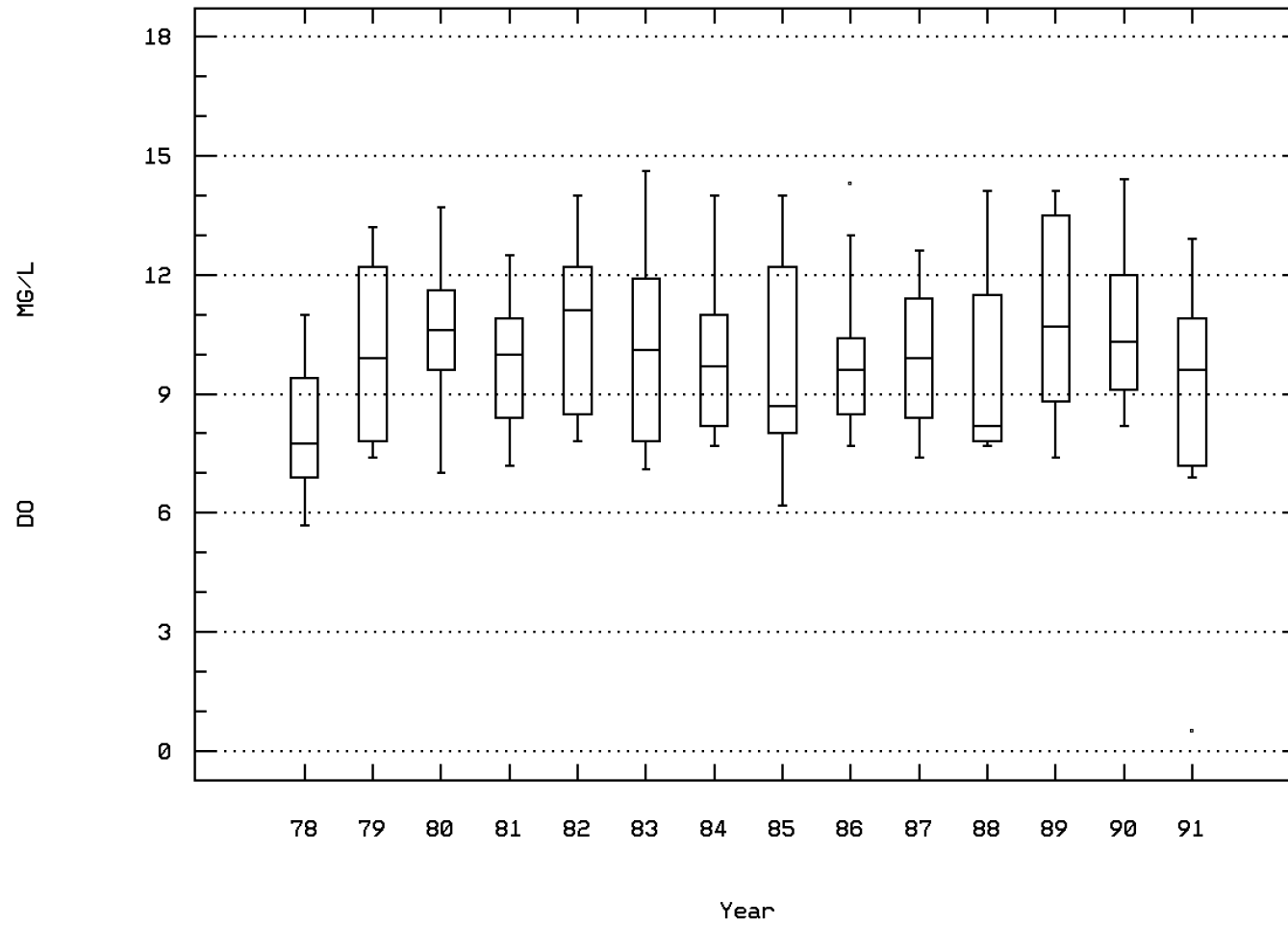
SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00300

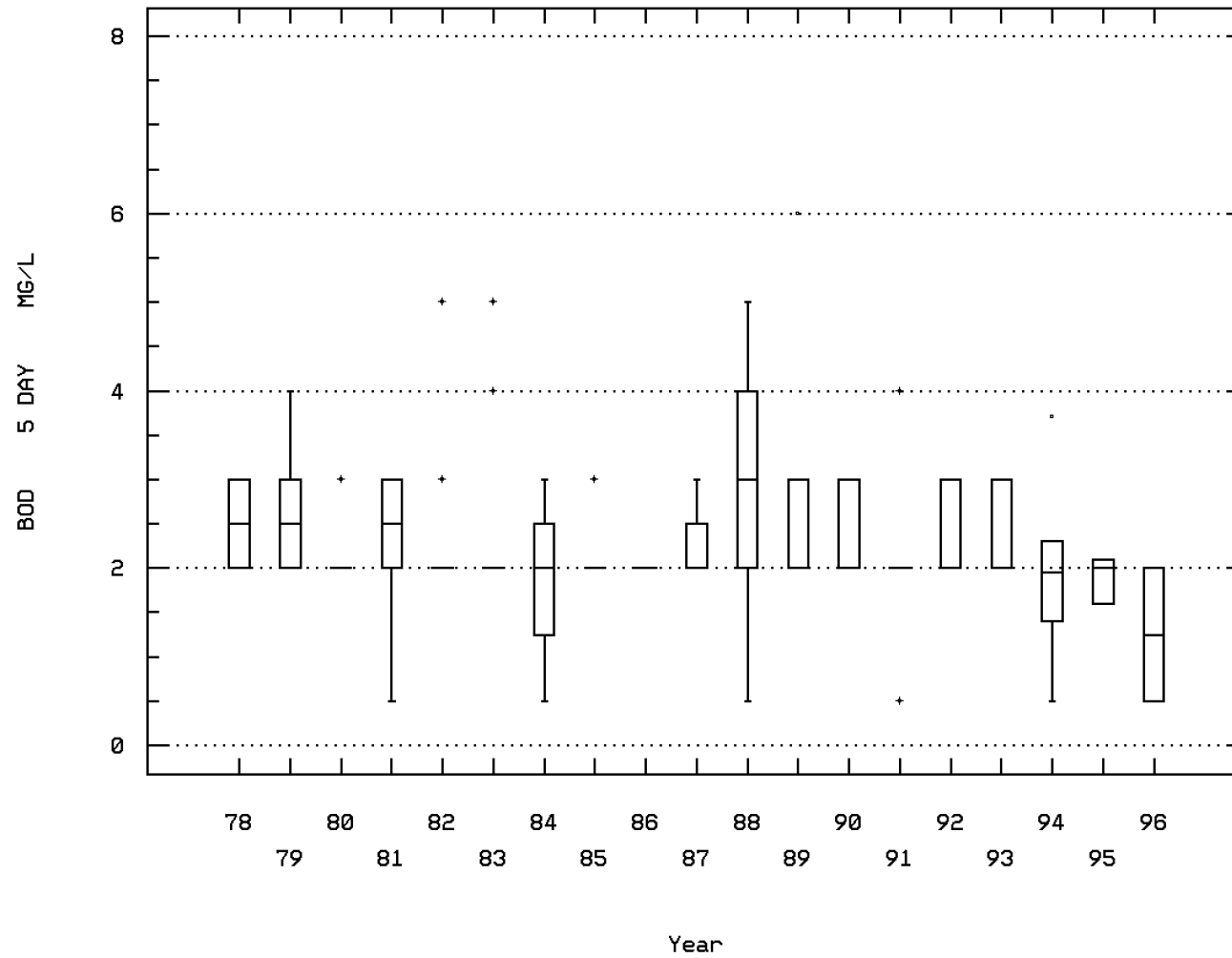
OXYGEN, DISSOLVED



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00310

BOD, 5 DAY, 20 DEG C

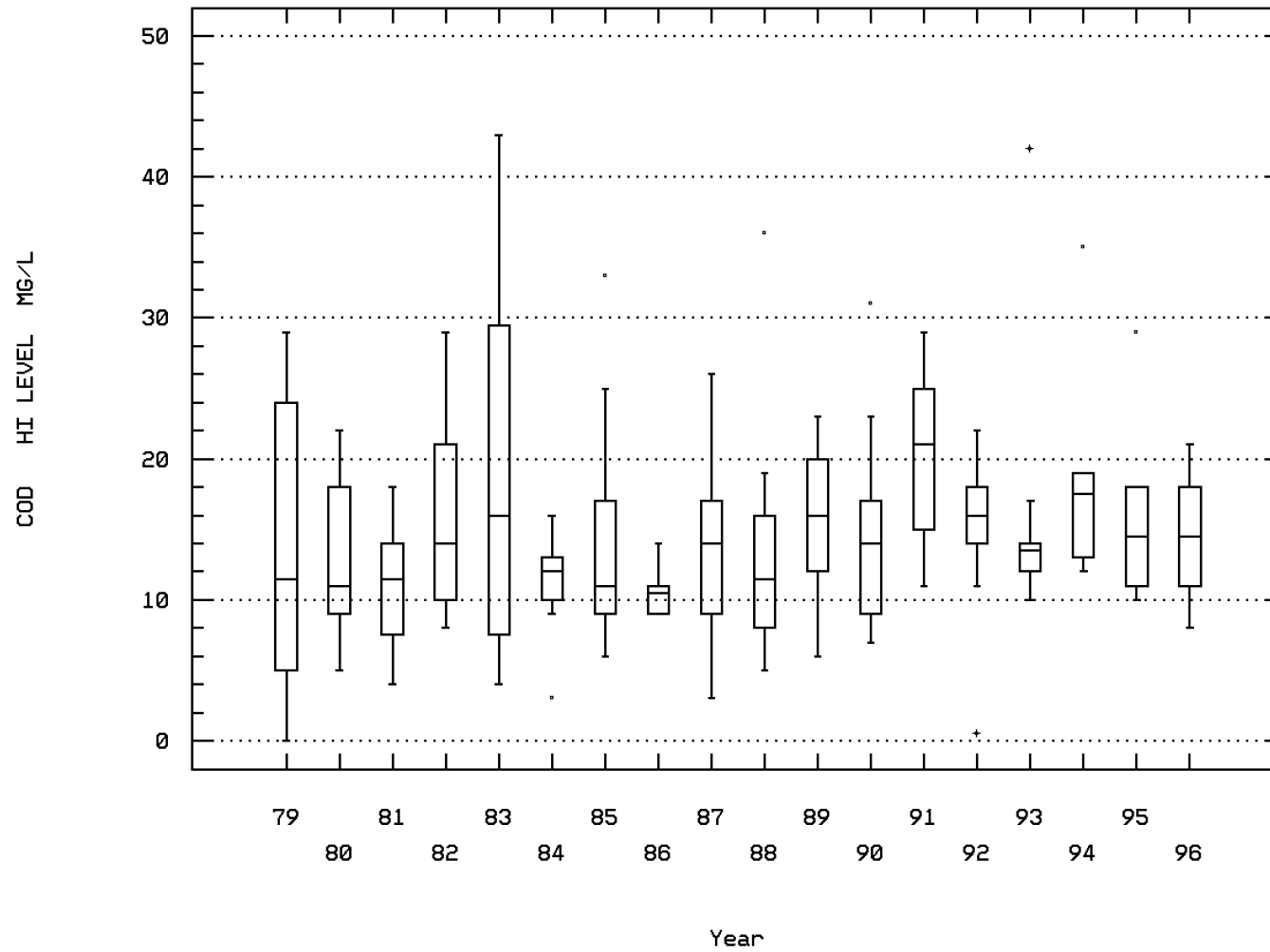


RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY



Station: MANA0001 Parameter Code: 00340

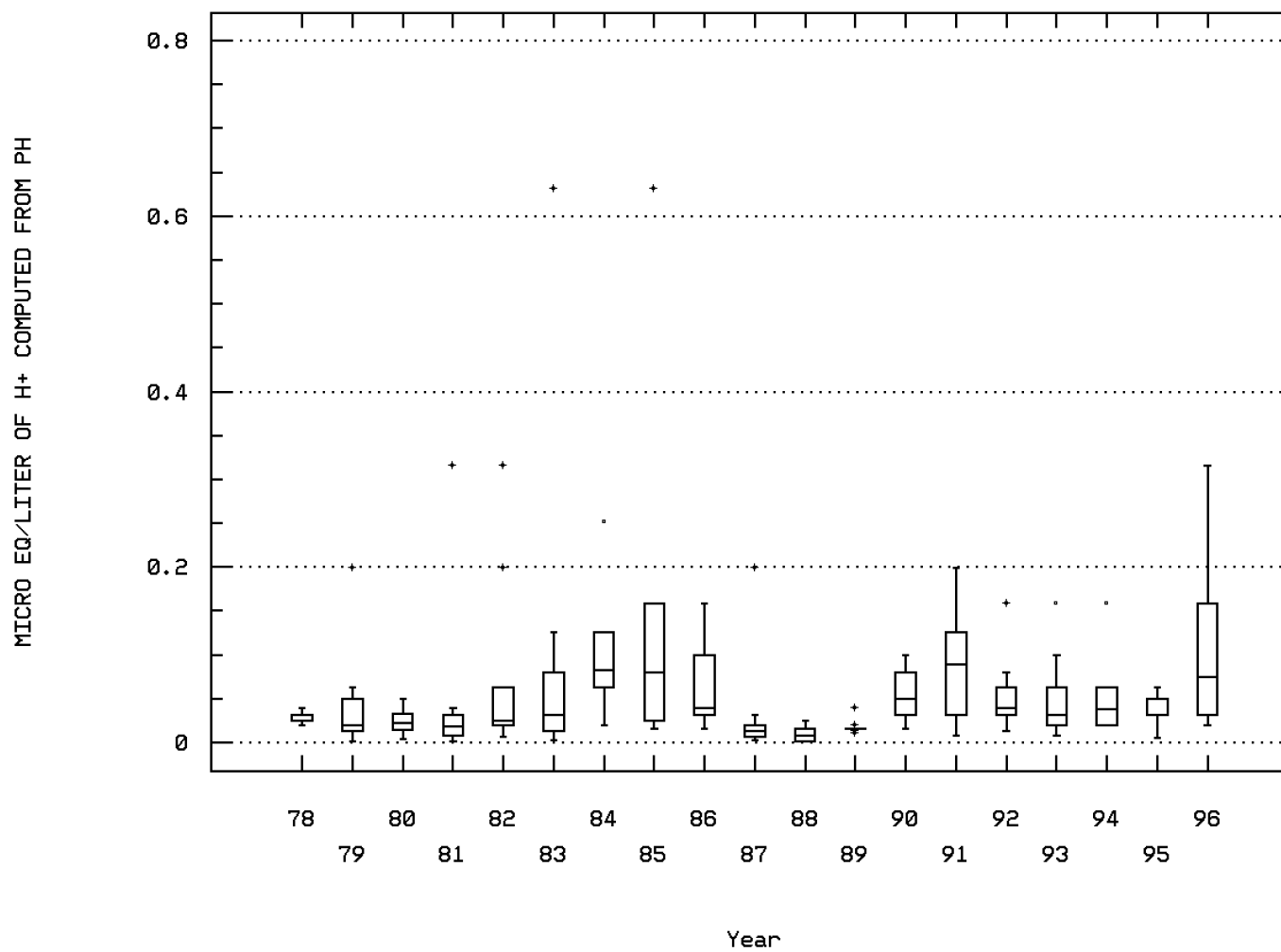
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RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00400

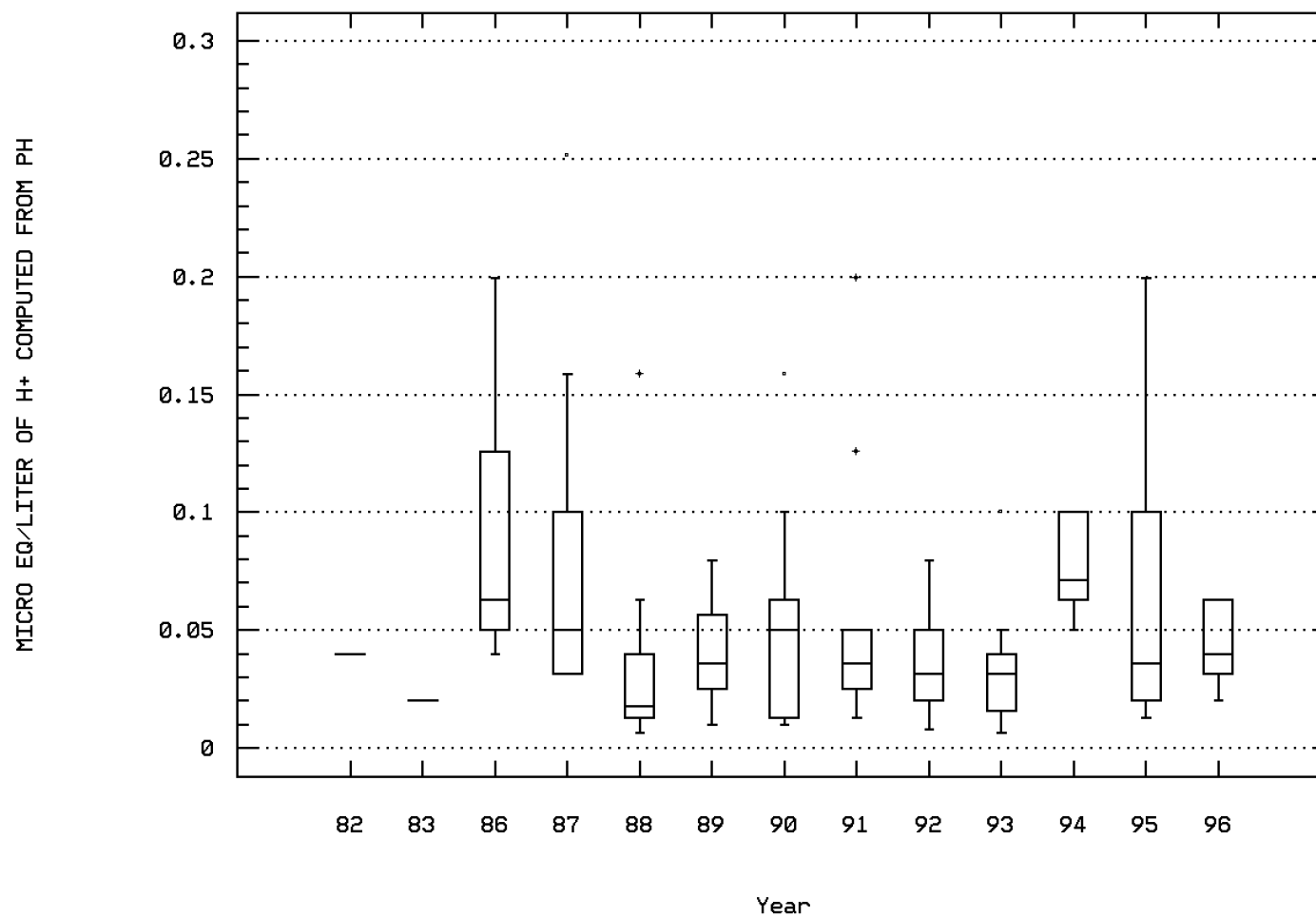
MICRO EQ/LITER OF H+ COMPUTED FROM PH



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00403

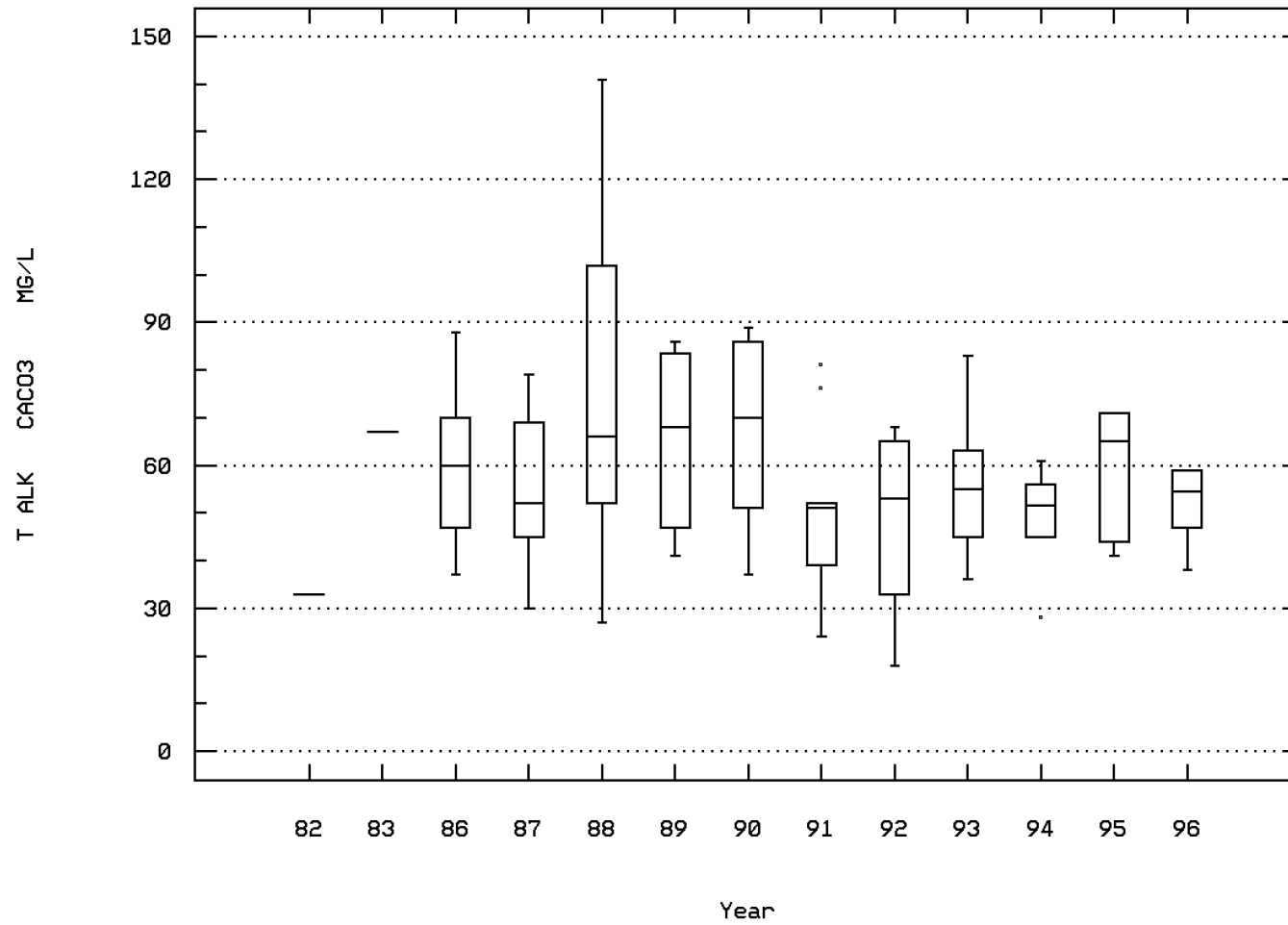
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RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00410

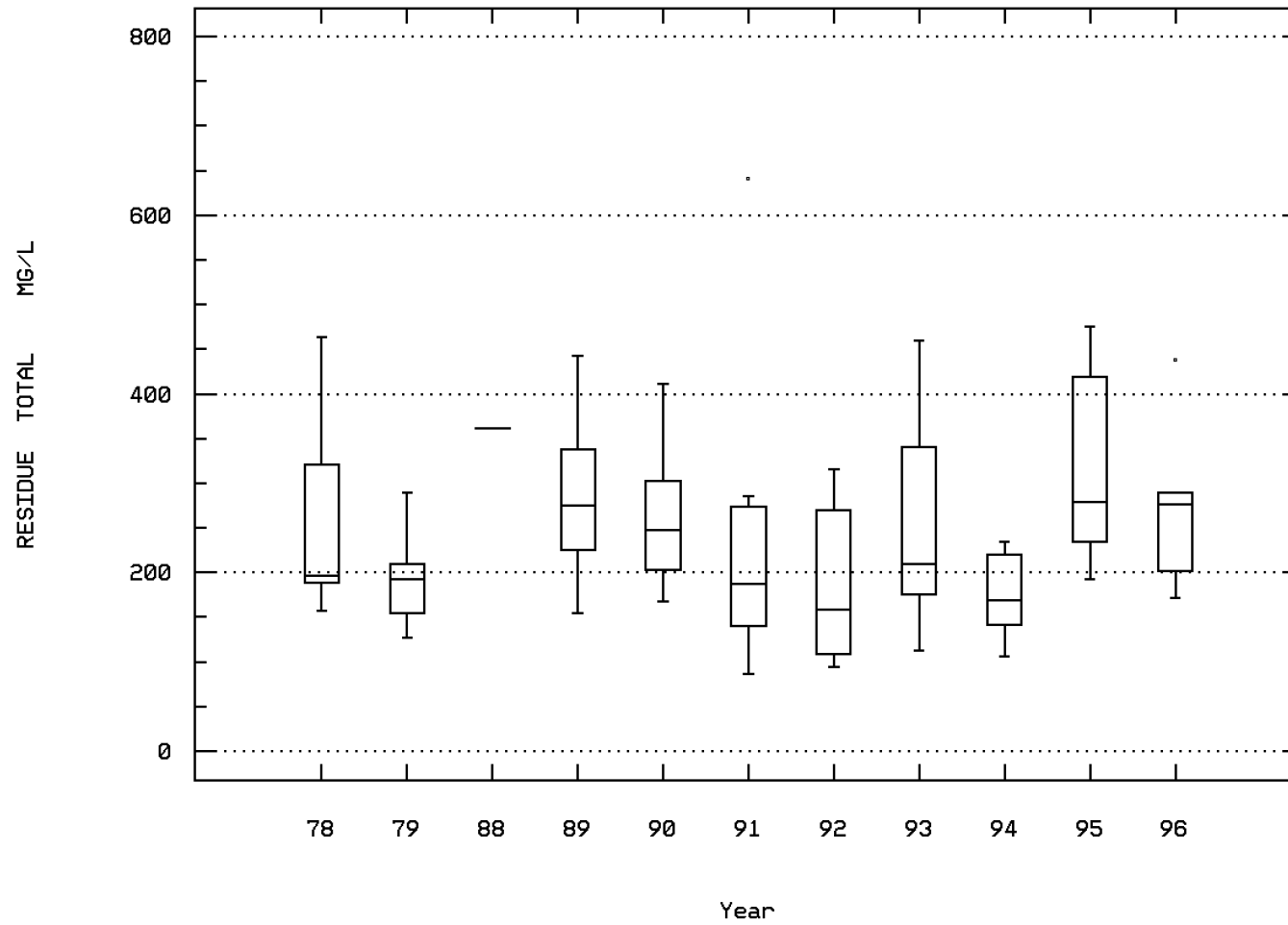
ALKALINITY, TOTAL (MG/L AS CaCO3)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00500

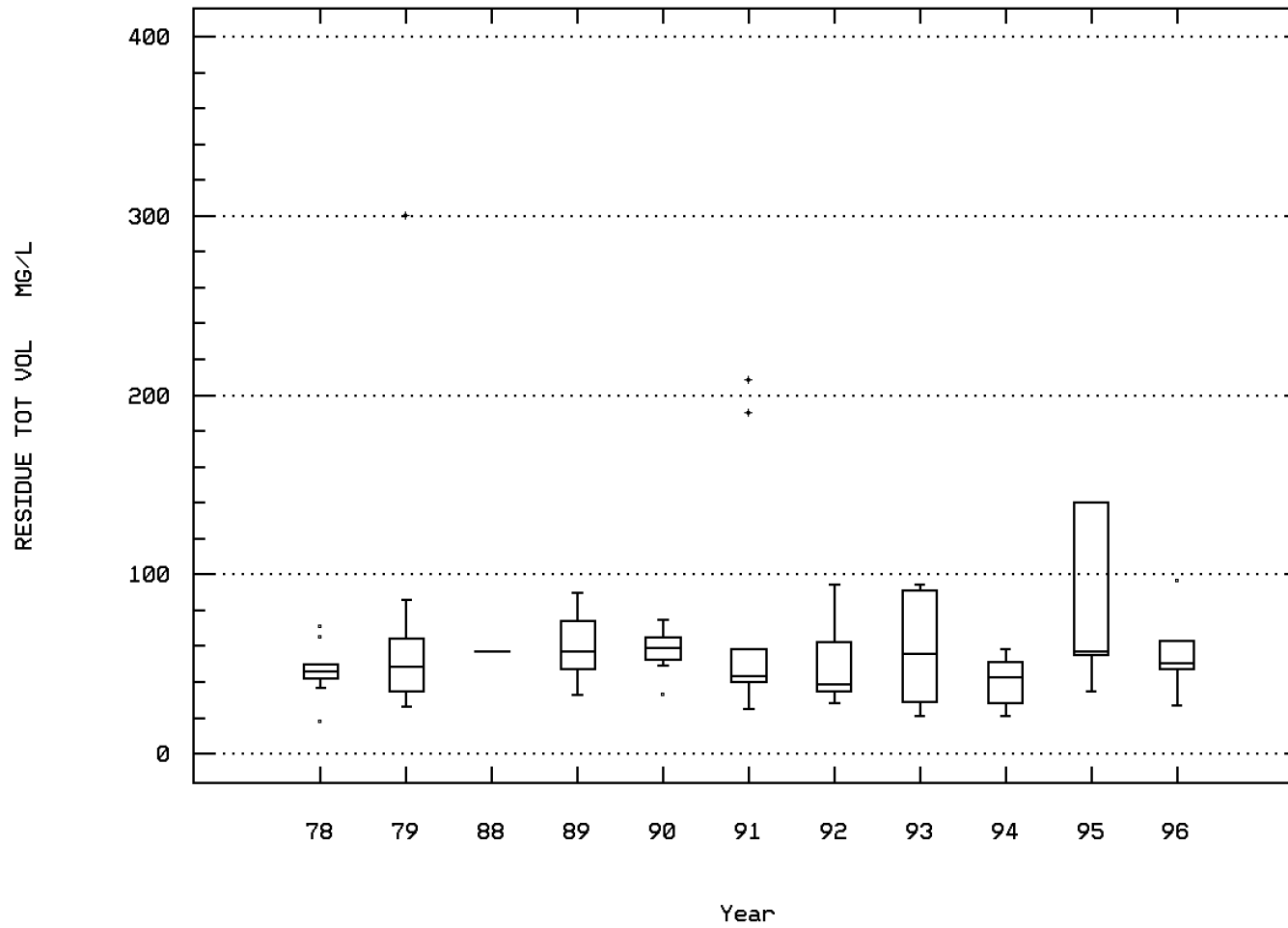
RESIDUE, TOTAL (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00505

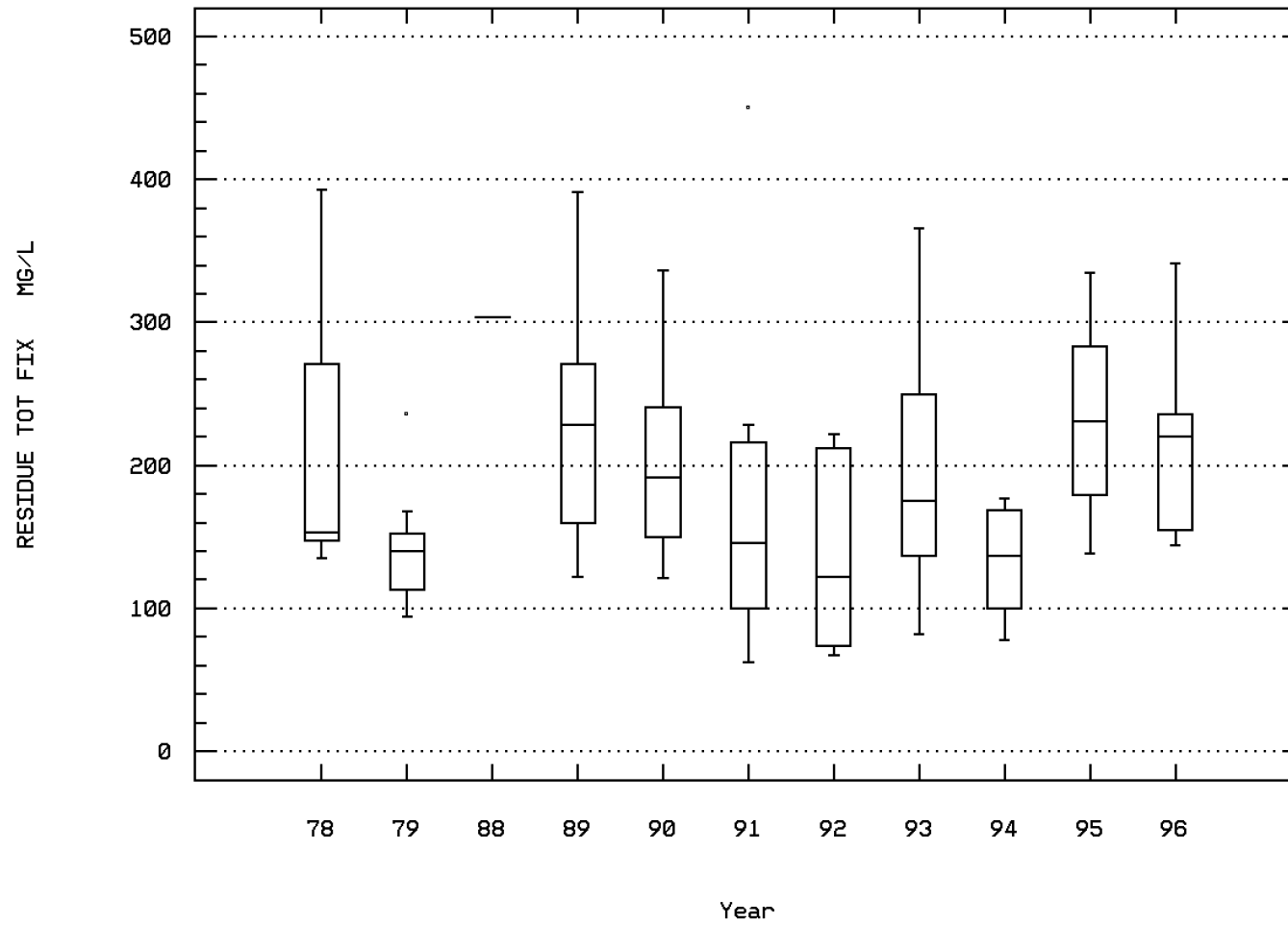
RESIDUE, TOTAL VOLATILE (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00510

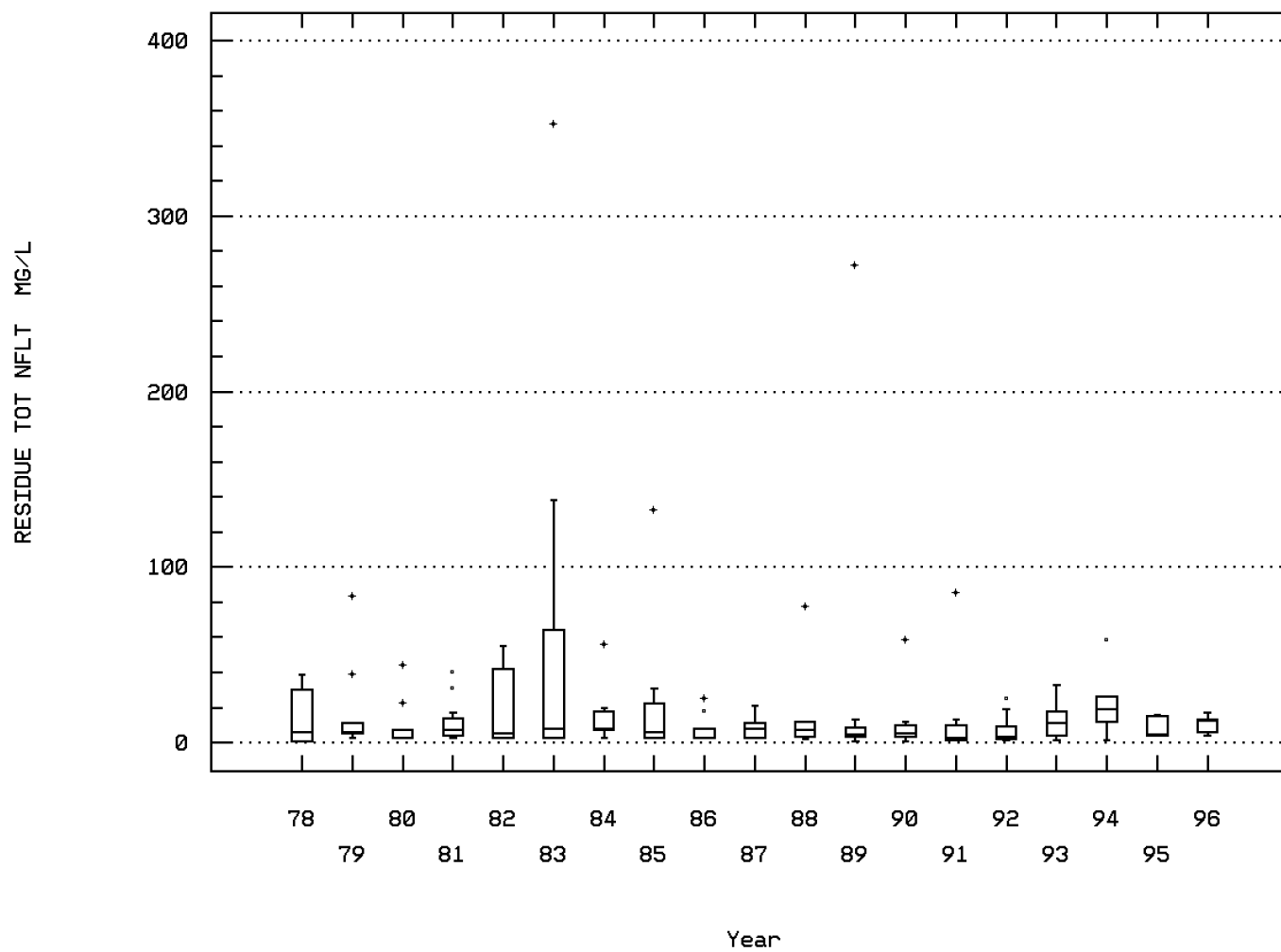
RESIDUE, TOTAL FIXED (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00530

RESIDUE, TOTAL NONFILTRABLE (MG/L)

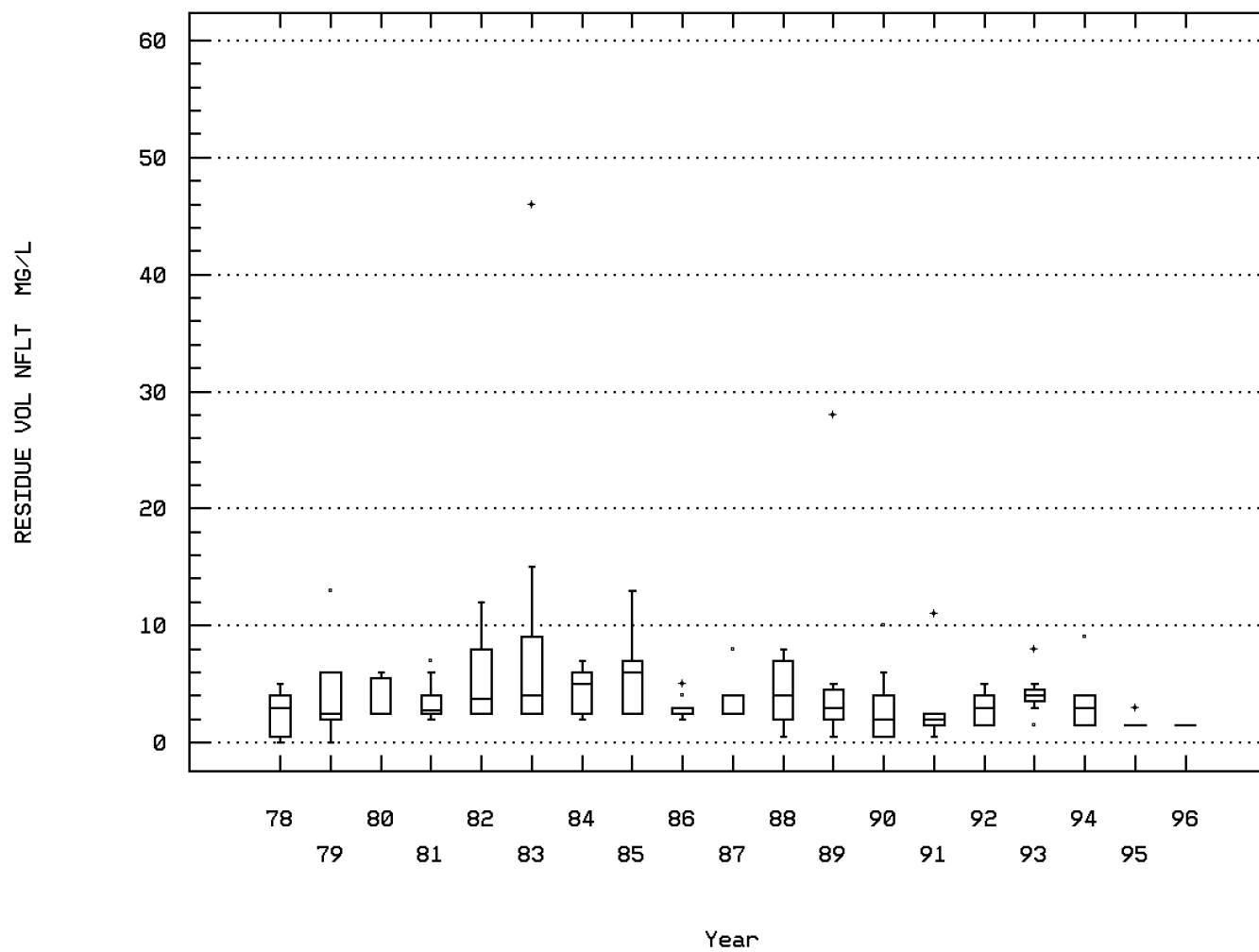


RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY



Station: MANA0001 Parameter Code: 00535

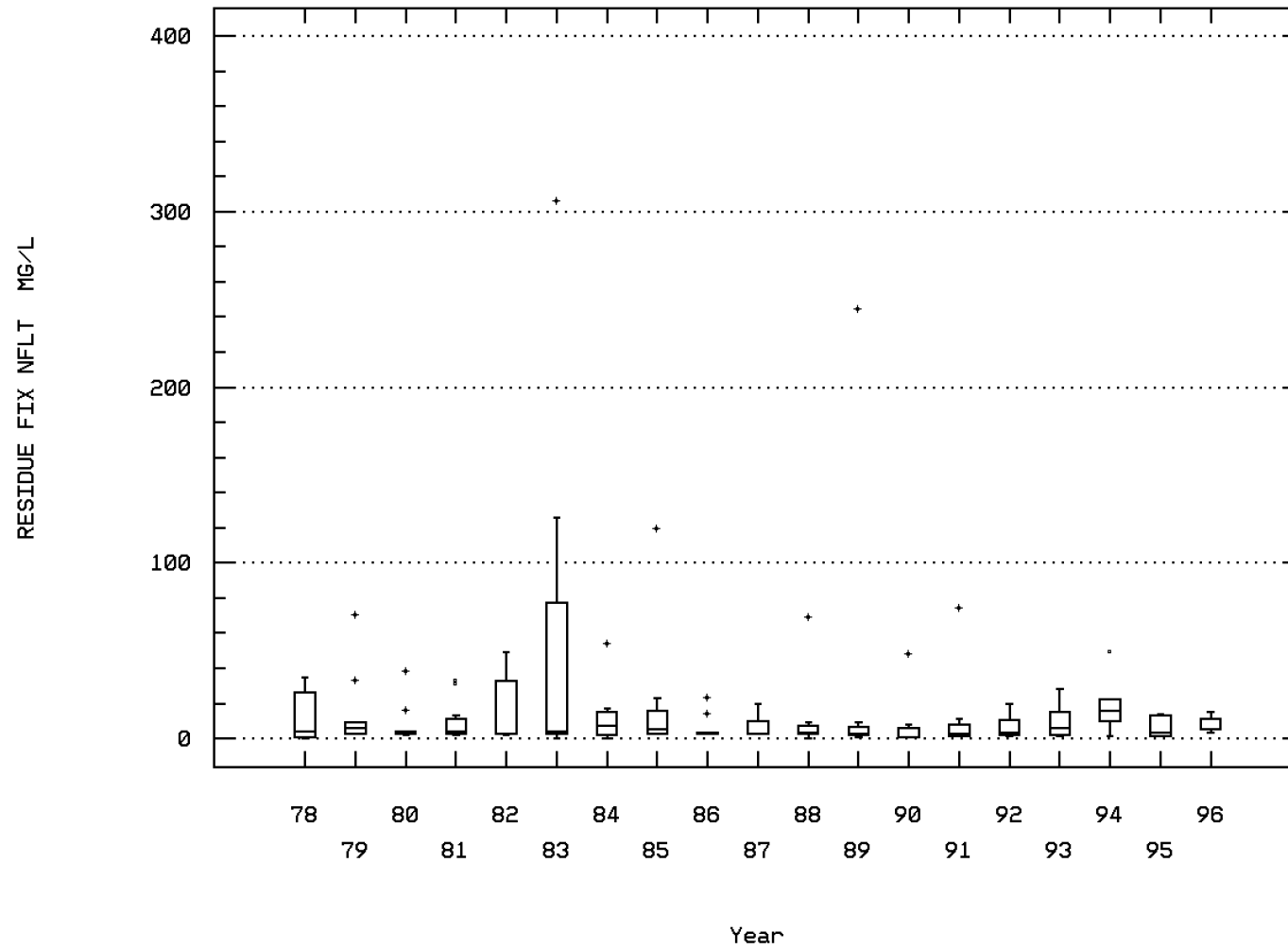
RESIDUE, VOLATILE NONFILTRABLE (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00540

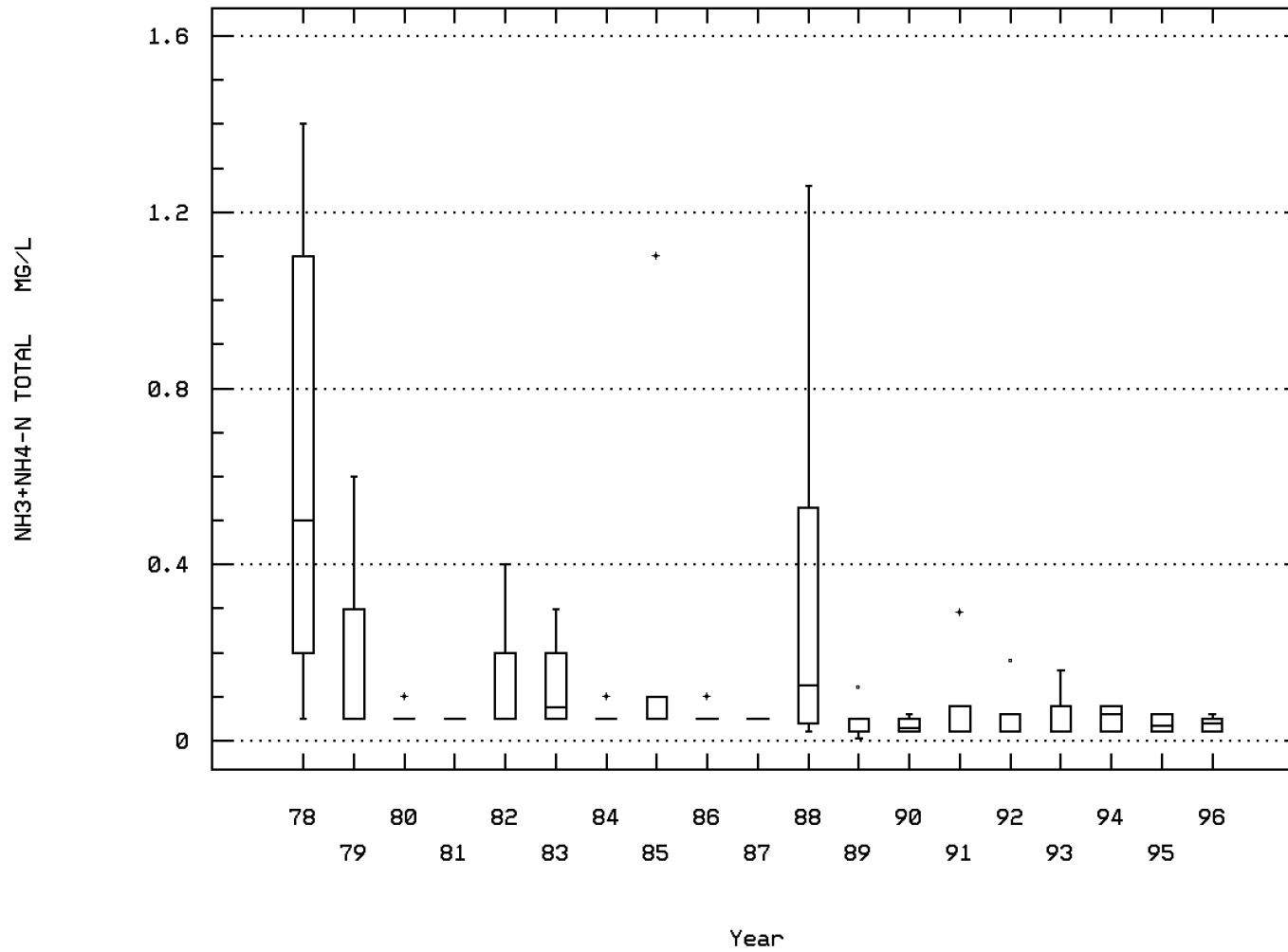
RESIDUE, FIXED NONFILTRABLE (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00610

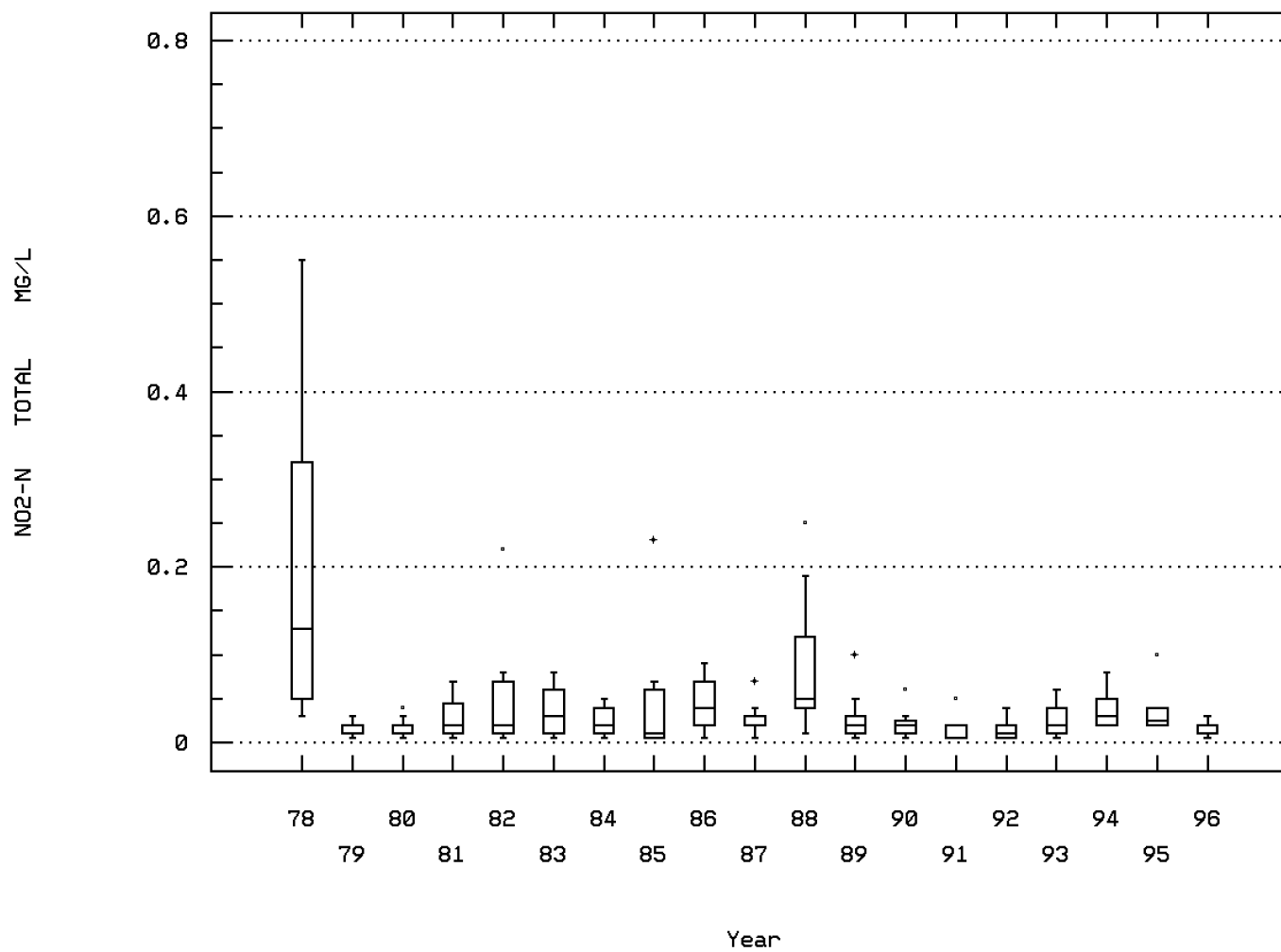
NITROGEN, AMMONIA, TOTAL (MG/L AS N)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00615

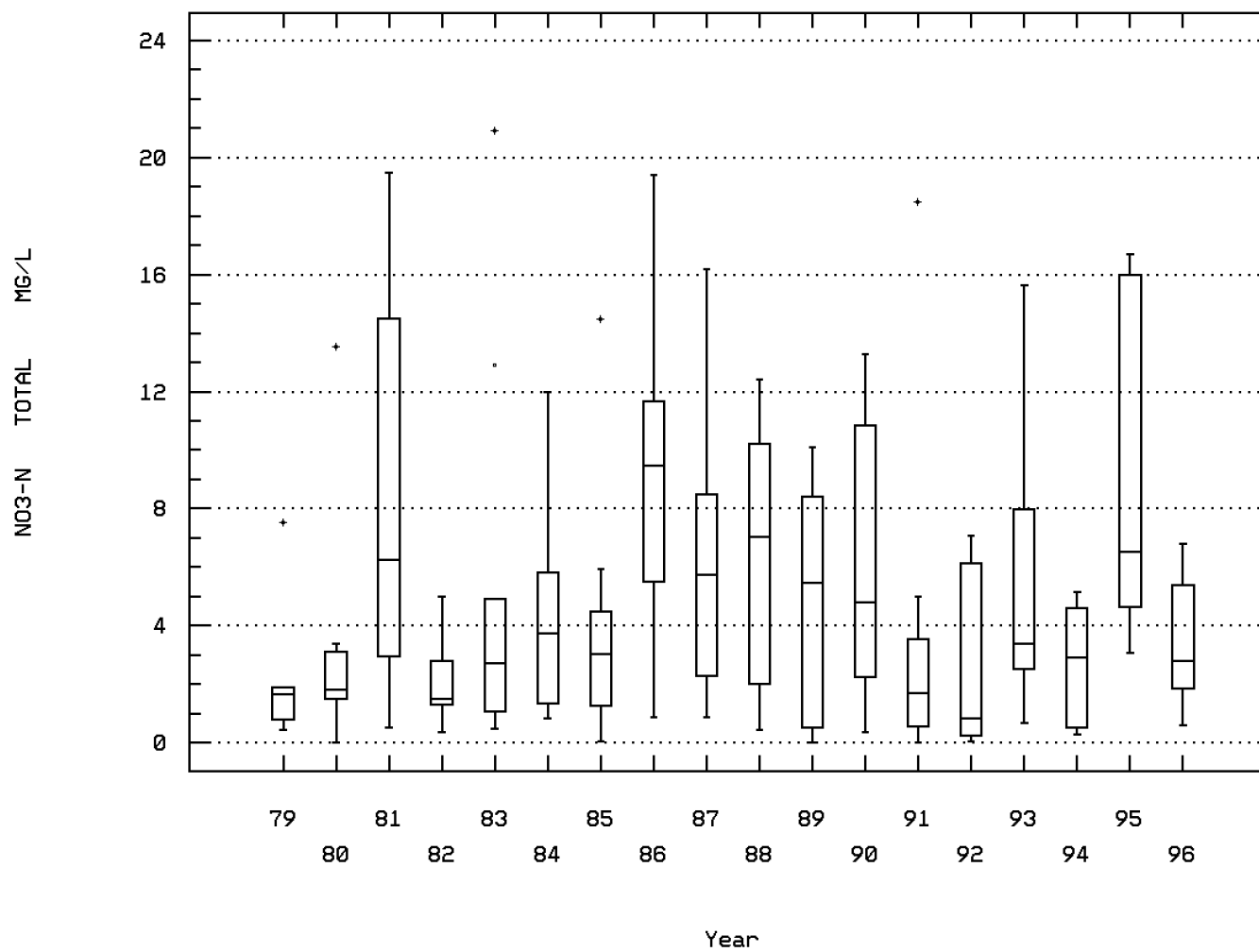
NITRITE NITROGEN, TOTAL (MG/L AS N)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00620

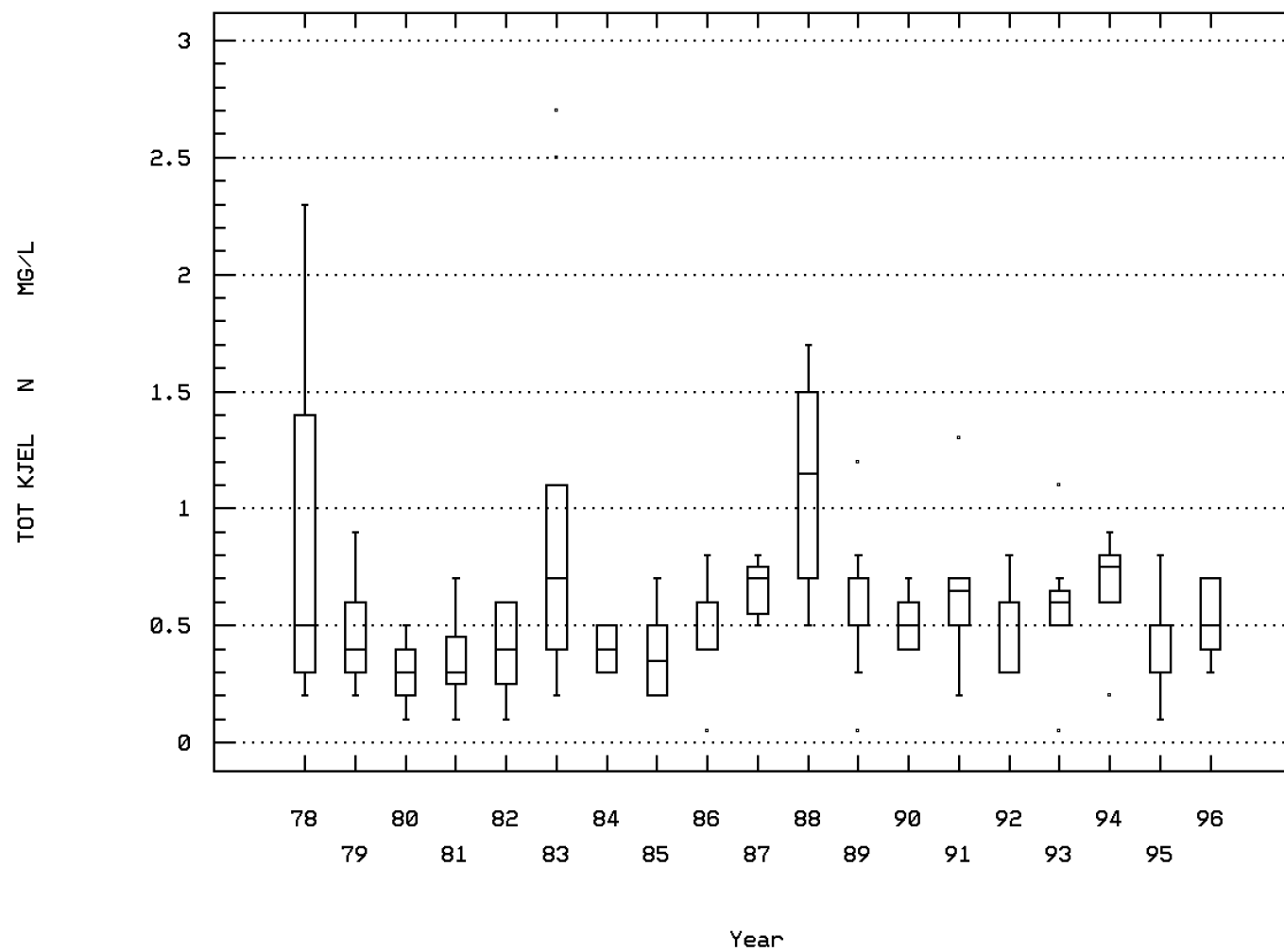
NITRATE NITROGEN, TOTAL (MG/L AS N)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00625

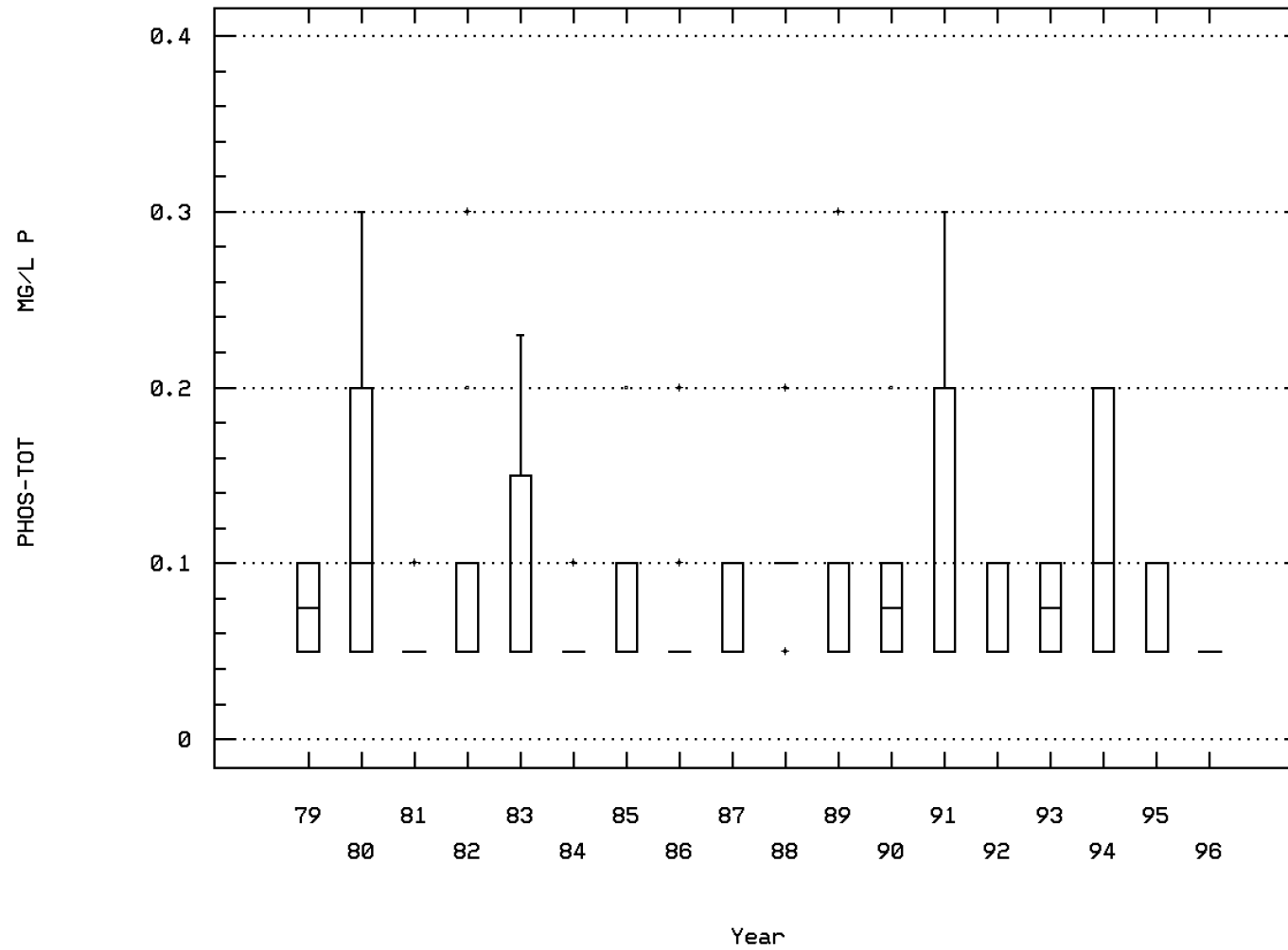
NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00665

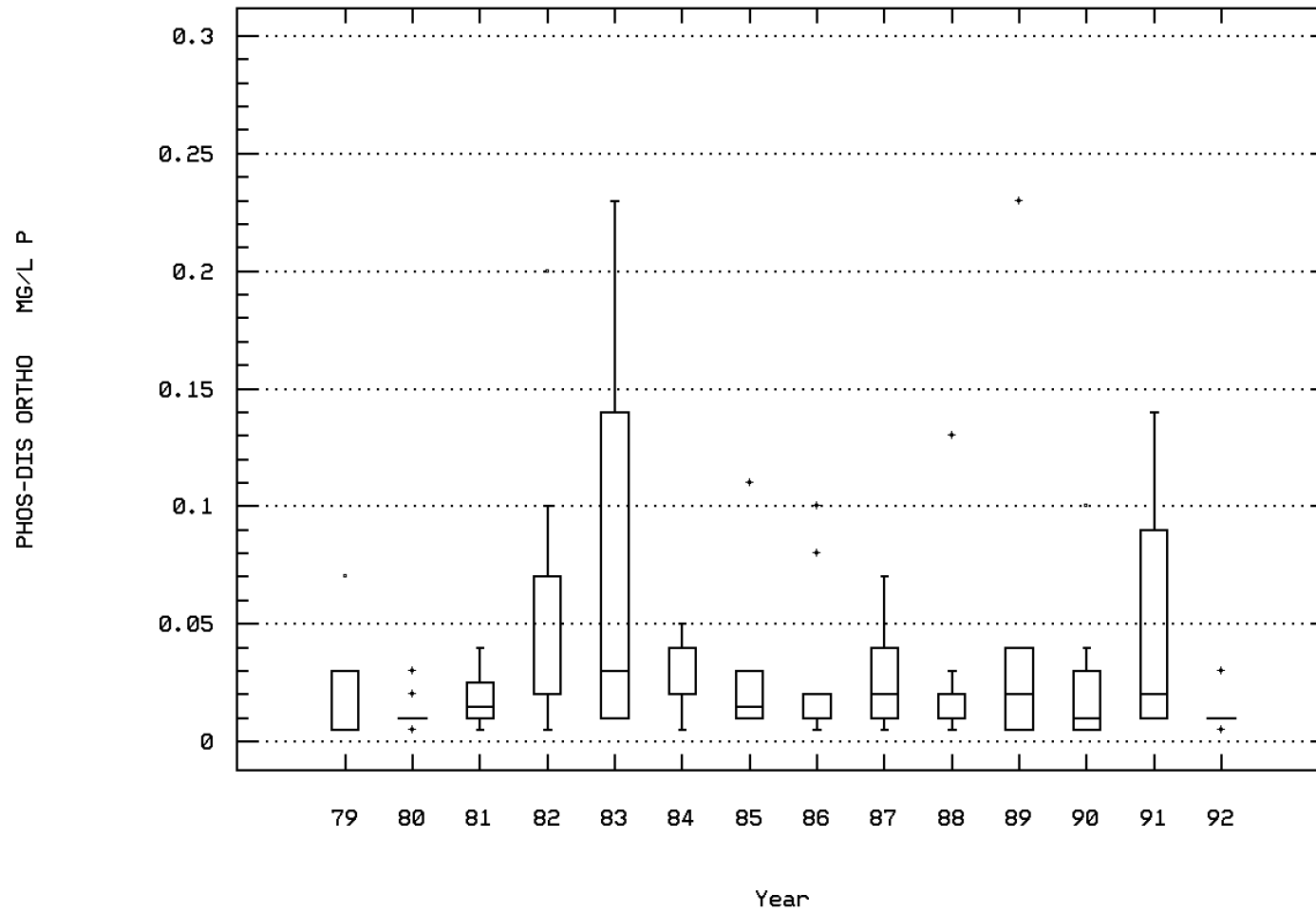
PHOSPHORUS, TOTAL (MG/L AS P)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00671

PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (M

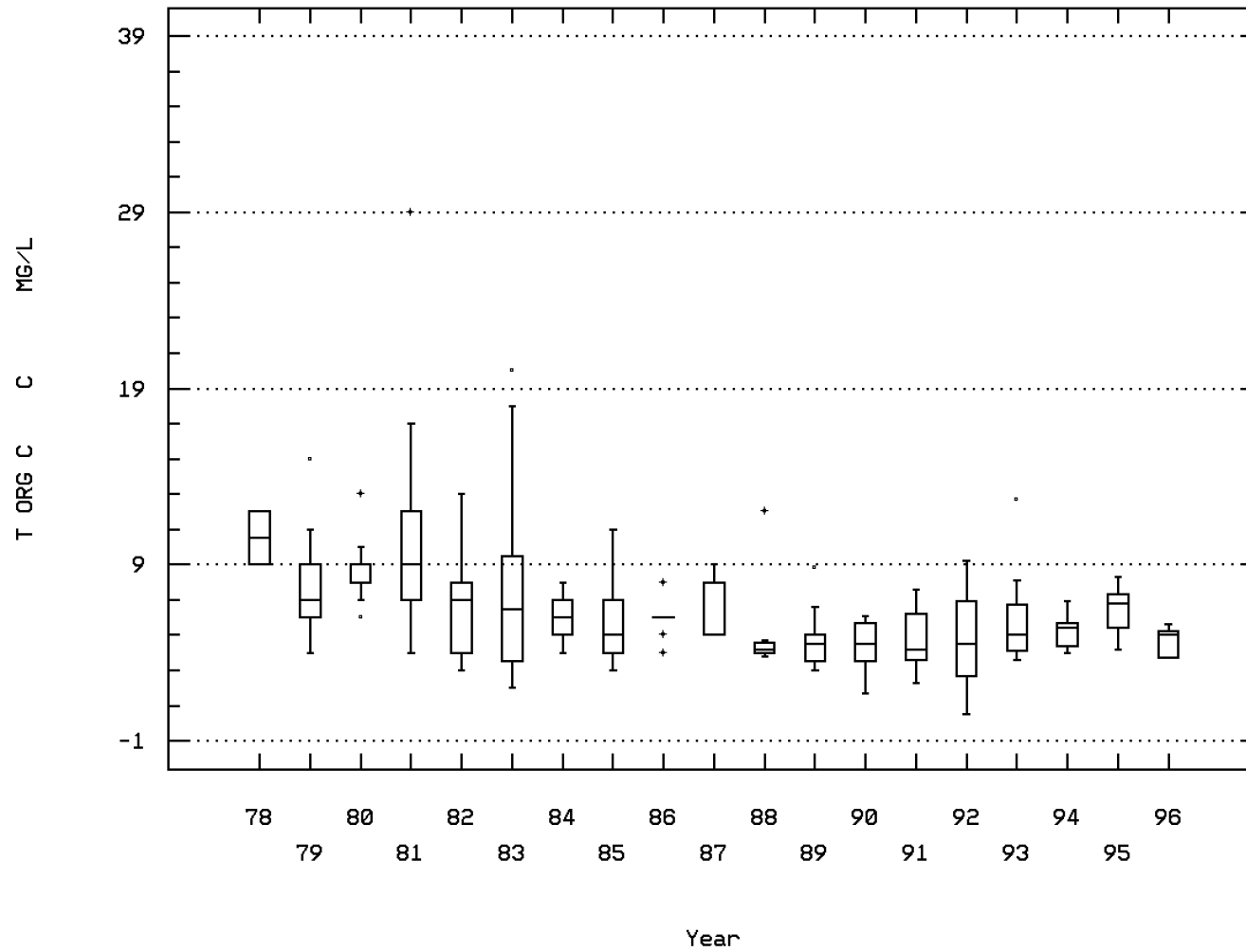


RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY



Station: MANA0001 Parameter Code: 00680

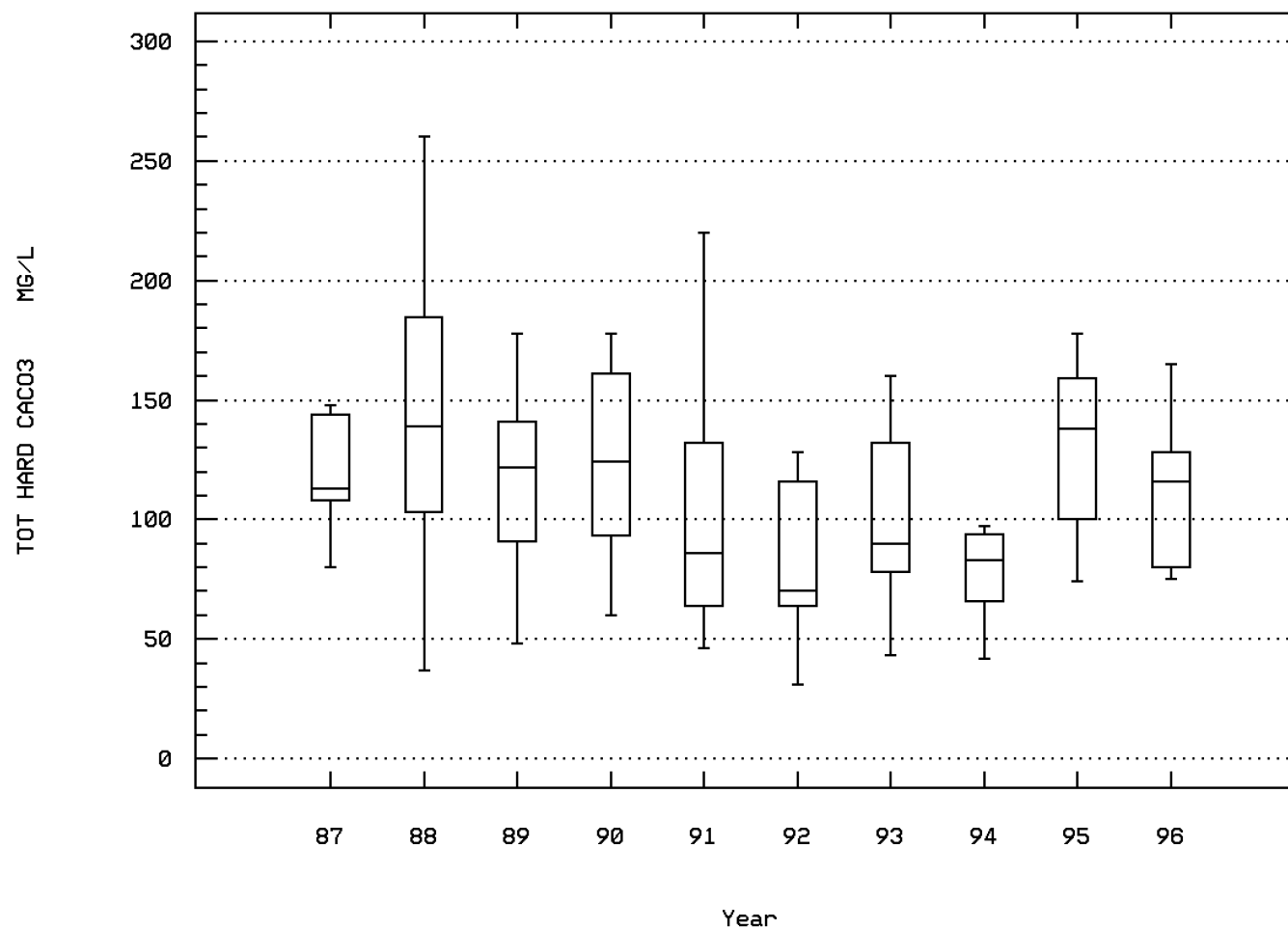
CARBON, TOTAL ORGANIC (MG/L AS C)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00900

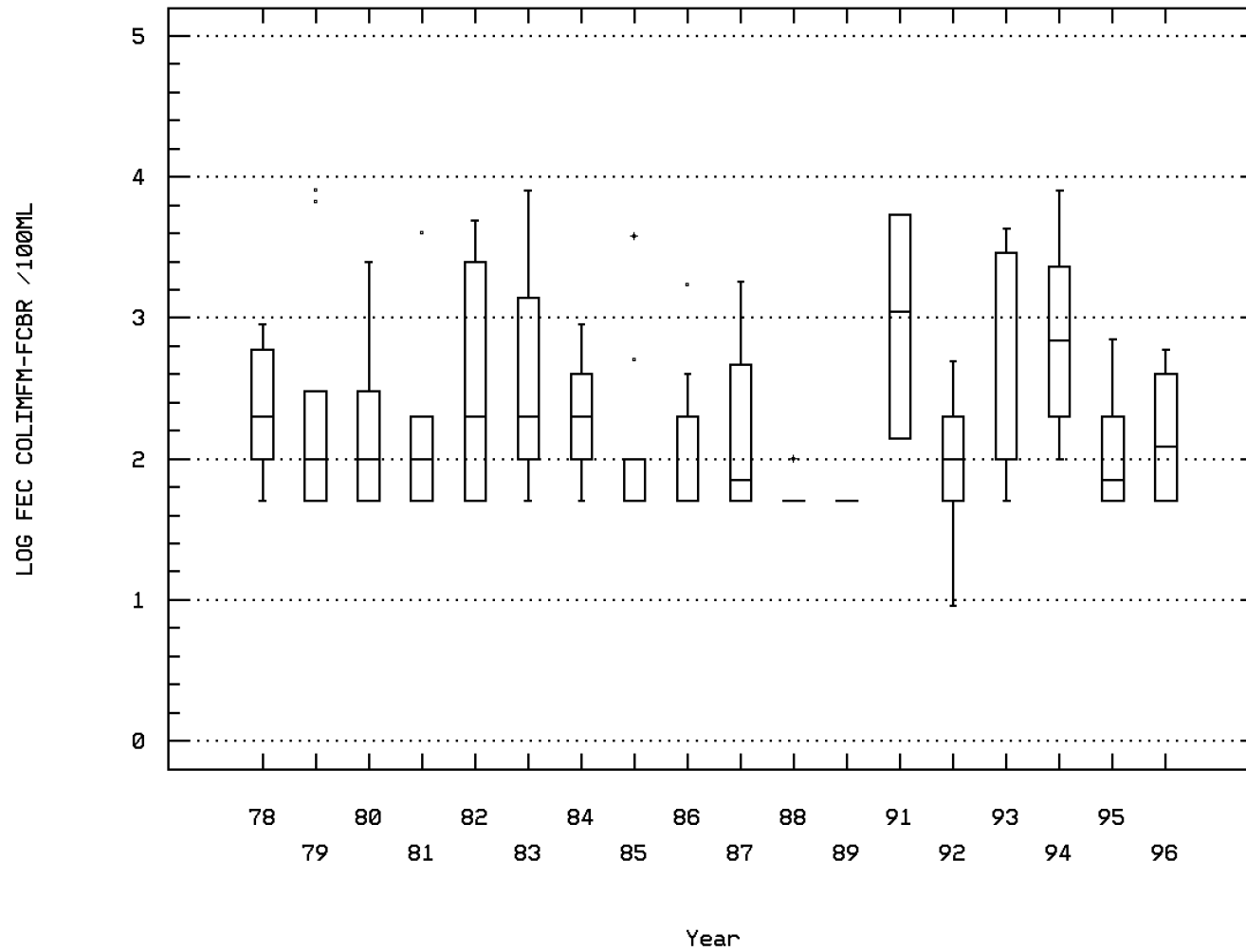
HARDNESS, TOTAL (MG/L AS CaCO3)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 31616

LOG FECAL COLIFORM, MEMBR FILTER, M-FC BR



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	82	6.7	7.743	21.6	0.	29.332	5.416	1.65	3.475	12.075	15.47
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	64	360.5	465.828	3370.	96.	195271.16	441.895	163.	249.	567.	810.5
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	28	375.	445.036	2840.	90.	248598.036	498.596	154.	198.75	467.25	718.6
00300	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	66	11.6	11.353	14.6	0.5	5.535	2.353	8.35	10.175	13.025	14.03
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	81	2.	1.826	5.	0.5	0.882	0.939	1.	1.	2.	3.
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	80	13.	14.238	43.	3.	47.475	6.89	7.	10.	17.	23.
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	77	7.5	7.465	9.	6.2	0.257	0.507	6.8	7.15	7.8	8.1
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	77	7.5	7.165	9.	6.2	0.348	0.59	6.8	7.15	7.8	8.1
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	77	0.032	0.068	0.631	0.001	0.012	0.11	0.008	0.016	0.071	0.158
00403	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	44	7.4	7.427	8.2	6.7	0.132	0.363	6.95	7.2	7.7	7.95
00403	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	44	7.4	7.282	8.2	6.7	0.153	0.391	6.95	7.2	7.7	7.95
00403	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	44	0.04	0.052	0.2	0.006	0.002	0.046	0.011	0.02	0.063	0.113
00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	44	60.	62.705	141.	18.	488.864	22.11	36.5	48.75	77.75	88.
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	41	244.	258.951	640.	87.	14558.698	120.659	107.4	172.	314.	435.4
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	42	54.5	61.5	208.	23.	1497.28	38.695	28.3	38.5	65.5	95.4
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	42	185.	199.286	450.	62.	8904.258	94.362	78.6	134.	250.25	339.2
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	83	5.	15.56	352.	0.5	1782.326	42.218	1.5	2.5	12.	31.6
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	82	2.5	3.396	46.	0.5	28.572	5.345	1.	1.5	3.25	5.7
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	83	3.	12.819	306.	0.	1366.967	36.973	1.	2.	9.	29.
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	83 ##	0.05	0.111	1.26	0.005	0.043	0.208	0.02	0.02	0.08	0.26
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	83	0.01	0.032	0.55	0.005	0.005	0.069	0.005	0.01	0.03	0.05
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	79	3.	4.687	19.5	0.06	22.255	4.718	0.49	1.3	6.8	13.27
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	83	0.5	0.511	1.7	0.1	0.073	0.27	0.2	0.3	0.6	0.8
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	79 ##	0.05	0.073	0.2	0.05	0.002	0.04	0.05	0.05	0.1	0.1
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	64	0.02	0.032	0.2	0.005	0.002	0.043	0.005	0.01	0.03	0.085
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	77	5.6	6.021	20.	1.	10.236	3.199	3.	3.85	7.	9.04
00900	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	43	110.	114.535	260.	31.	2241.779	47.347	63.6	80.	146.	172.8
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	37	42.	40.811	168.	0.	1032.435	32.132	7.	11.5	52.5	73.2
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	35	40.	46.457	173.	0.	993.197	31.515	12.6	27.	58.	84.2
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	67	100.	541.627	6600.	9.	1442760.359	1201.15	50.	300.	1840.	
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	67	2.	2.182	3.82	0.954	0.374	0.612	1.699	1.699	2.477	3.26
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			152.177								
50060	CHLORINE, TOTAL RESIDUAL (MG/L)	04/18/78-06/17/86	15	0.	0.04	0.2	0.	0.005	0.074	0.	0.	0.1	0.2
70507p	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	04/18/78-07/17/96	19	0.02	0.025	0.05	0.005	0.	0.014	0.005	0.02	0.04	0.05

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0001

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	65	19.1	18.812	28.2	6.	32.045	5.661	11.	14.15	24.	25.72
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	52	292.	314.615	702.	21.	22716.163	150.719	141.2	195.5	413.25	555.8
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	21	275.	319.857	591.	143.	13976.729	118.223	159.2	252.5	402.5	527.2
00300	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	51	8.9	9.098	12.6	5.7	3.002	1.733	6.92	7.8	10.3	11.56
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	66	2.	1.848	6.	0.5	0.95	0.975	1.	1.	2.	3.
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	58	14.	15.759	42.	0.	62.011	7.875	8.8	11.	19.	28.1
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	60	7.45	7.476	8.7	6.5	0.235	0.484	6.8	7.2	7.775	7.9
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	60	7.447	7.246	8.7	6.5	0.288	0.537	6.8	7.2	7.775	7.9
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	60	0.036	0.057	0.316	0.002	0.004	0.062	0.013	0.017	0.063	0.158
00403	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	34	7.4	7.371	8.2	6.6	0.133	0.365	6.8	7.175	7.55	7.85
00403	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	34	7.4	7.221	8.2	6.6	0.156	0.395	6.8	7.175	7.55	7.85
00403	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	34	0.04	0.06	0.251	0.006	0.003	0.057	0.014	0.029	0.067	0.158
00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	34	51.5	52.412	81.	27.	202.613	14.234	33.	40.5	65.	72.
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	33	202.	211.848	391.	95.	3683.07	60.688	138.2	176.	256.	287.8
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	33	50.	56.879	300.	21.	2189.672	46.794	27.4	36.	60.	81.2
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	33	149.	162.455	317.	67.	3094.443	55.628	86.8	135.	207.	232.8
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	67	7.	17.694	272.	0.5	1409.257	37.54	2.5	3.	17.	34.4

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0001

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th	
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	67	2.5	3.813	28.	0.	14.749	3.84	1.	1.5	5.	7.
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	67	4.	14.366	244.	0.	1158.345	34.034	1.	2.	14.	31.4
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	66 ##	0.05	0.148	1.4	0.02	0.082	0.286	0.02	0.05	0.07	0.336
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	66	0.02	0.052	0.54	0.005	0.007	0.084	0.005	0.01	0.053	0.123
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	59	2.8	3.741	15.91	0.01	14.01	3.743	0.49	1.08	5.	10.2
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	65	0.6	0.685	2.7	0.1	0.258	0.508	0.26	0.4	0.75	1.28
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	58 ##	0.05	0.094	0.3	0.05	0.005	0.07	0.05	0.05	0.1	0.2
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	46	0.015	0.033	0.23	0.005	0.003	0.05	0.005	0.01	0.03	0.085
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	63	6.	6.644	18.	2.9	8.827	2.971	3.88	4.5	8.3	10.6
00900	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	28	90.5	95.143	162.	37.	1140.275	33.768	48.	71.	124.5	150.4
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	25	24.	25.96	64.	8.	172.457	13.132	8.	17.5	32.5	44.2
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	24	31.	35.875	97.	13.	400.027	20.001	16.5	21.75	45.25	68.
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	54	100.	835.5	8000.	9.	2514982.104	1585.87	50.	50.	800.	3350.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	54	2.	2.32	3.903	0.954	0.503	0.709	1.699	1.699	2.903	3.523
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			208.968								
50060	CHLORINE, TOTAL RESIDUAL (MG/L)	04/18/78-06/17/86	17	0.	0.059	0.3	0.	0.009	0.094	0.	0.	0.1	0.22
70507p	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	04/18/78-07/17/96	20	0.03	0.077	0.39	0.005	0.012	0.108	0.01	0.02	0.068	0.307

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

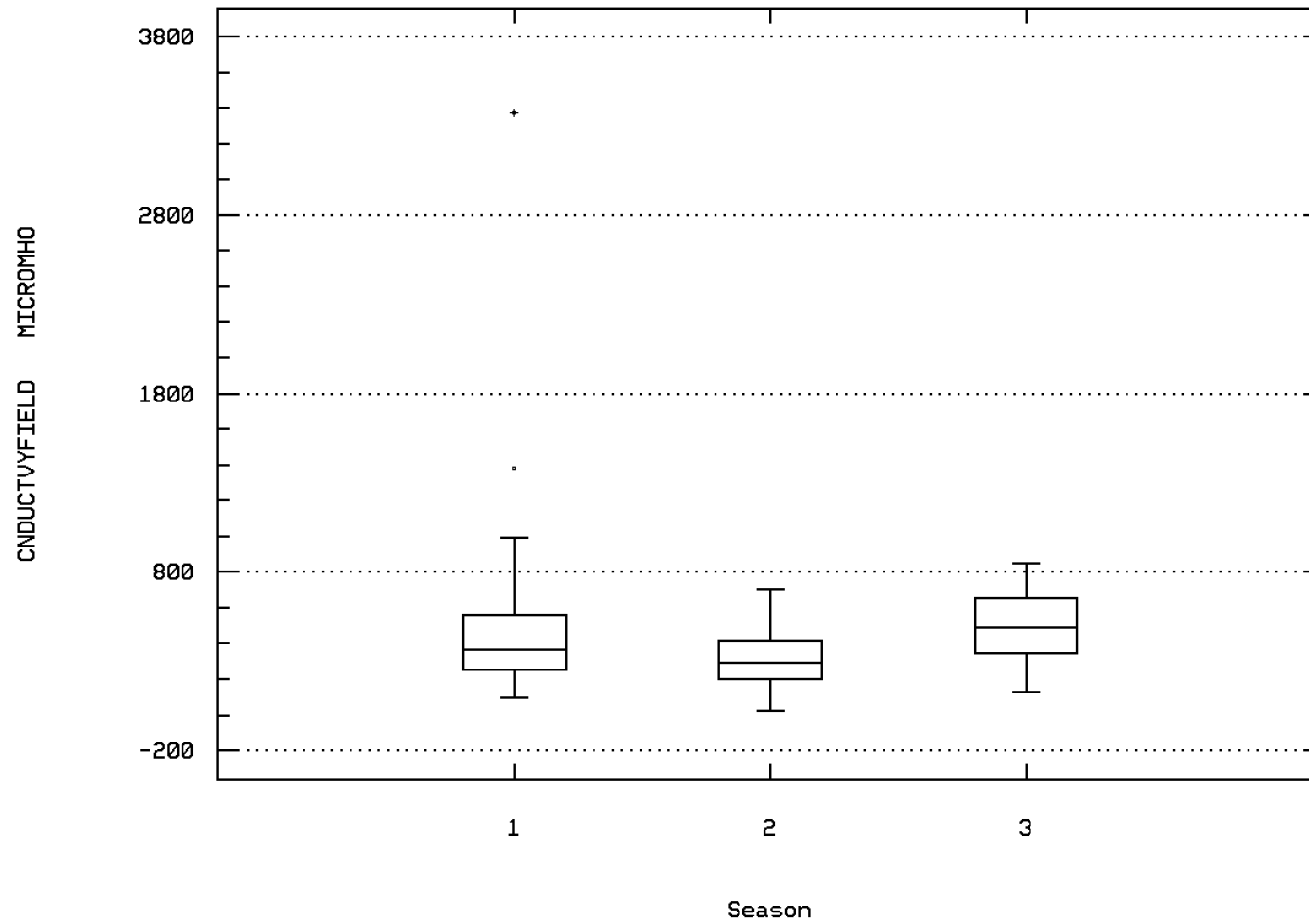
### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0001

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th	
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/18/78-07/17/96	35	23.1	23.674	32.	16.	12.178	3.49	19.56	21.4	26.2	28.52
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	07/10/79-07/17/96	29	486.	485.379	846.	130.	38352.03	195.837	159.	330.	653.	712.
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/14/89-06/05/96	11	407.	428.364	714.	114.	53241.855	230.742	122.6	175.	652.	705.6
00300	OXYGEN, DISSOLVED MG/L	04/18/78-11/06/91	27	8.2	8.089	9.9	6.9	0.541	0.736	7.1	7.4	8.5	8.96
00310p	BOD, 5 DAY, 20 DEG C MG/L	04/18/78-06/05/96	34	1.	1.782	4.	0.5	0.997	0.998	1.	1.	3.	3.
00340p	COD, .25N K2CR2O7 MG/L	07/10/79-06/05/96	32	12.5	14.328	35.	0.5	65.316	8.082	5.6	9.	18.75	27.5
00400p	PH (STANDARD UNITS)	04/18/78-07/17/96	36	7.6	7.661	8.8	6.5	0.269	0.518	7.	7.325	8.05	8.393
00400p	CONVERTED PH (STANDARD UNITS)	04/18/78-07/17/96	36	7.6	7.383	8.8	6.5	0.348	0.59	7.	7.325	8.05	8.393
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/18/78-07/17/96	36	0.025	0.041	0.316	0.002	0.003	0.057	0.004	0.009	0.048	0.1
00403	PH, LAB, STANDARD UNITS SU	06/14/82-06/05/96	21	7.4	7.448	8.1	7.	0.103	0.32	7.	7.2	7.6	8.
00403	CONVERTED PH, LAB, STANDARD UNITS	06/14/82-06/05/96	21	7.4	7.349	8.1	7.	0.113	0.336	7.	7.2	7.6	8.
00403	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/14/82-06/05/96	21	0.04	0.045	0.1	0.008	0.001	0.029	0.01	0.025	0.063	0.1
00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	06/14/82-06/05/96	21	61.	59.333	109.	28.	382.633	19.561	37.	45.	70.5	86.
00500p	RESIDUE, TOTAL (MG/L)	04/18/78-06/05/96	16	245.5	278.813	460.	141.	13321.096	115.417	152.2	178.	410.75	448.1
00505p	RESIDUE, TOTAL VOLATILE (MG/L)	04/18/78-06/05/96	16	53.5	62.25	140.	18.	883.533	29.724	23.6	41.75	79.5	107.8
00510p	RESIDUE, TOTAL FIXED (MG/L)	04/18/78-06/05/96	16	177.5	216.063	391.	100.	9358.596	96.74	112.6	140.75	311.25	373.5
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/18/78-06/05/96	33	8.	16.773	85.	0.5	526.267	22.941	1.9	2.5	17.5	58.
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/18/78-06/05/96	34	3.	4.426	13.	0.	11.957	3.458	1.	2.	6.5	10.5
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	04/18/78-06/05/96	34	3.5	12.721	74.	0.	385.427	19.632	0.75	2.5	13.25	48.5
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/18/78-07/17/96	34 ##	0.05	0.066	0.29	0.02	0.003	0.053	0.02	0.05	0.065	0.12
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/18/78-07/17/96	34	0.04	0.039	0.08	0.005	0.001	0.024	0.005	0.02	0.053	0.075
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	07/10/79-07/17/96	32	6.905	7.874	20.9	0.02	37.982	6.163	0.385	1.718	12.618	16.544
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/18/78-07/17/96	33	0.6	0.585	1.3	0.05	0.116	0.34	0.11	0.3	0.8	1.1
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	07/10/79-07/17/96	32	0.1	0.097	0.3	0.05	0.004	0.061	0.05	0.05	0.1	0.2
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/10/79-05/05/92	23	0.02	0.033	0.14	0.005	0.001	0.038	0.007	0.01	0.04	0.1
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	08/10/78-06/05/96	32	5.8	6.438	29.	0.5	21.742	4.663	3.	4.55	7.075	8.7
00900	HARDNESS, TOTAL (MG/L AS CaCO3)	07/23/87-06/05/96	20	124.	127.1	188.	42.	1933.147	43.968	60.4	97.5	173.25	186.5
00940	CHLORIDE, TOTAL IN WATER MG/L	06/14/82-06/05/96	11	37.	43.091	80.	8.	807.491	28.416	8.4	14.	69.	79.6
00945	SULFATE, TOTAL (MG/L AS SO4)	11/15/88-06/05/96	11	47.	48.364	89.	9.	831.055	28.828	10.6	18.	74.	86.2
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	25	200.	918.	8000.	50.	4779766.667	2186.268	50.	100.	450.	4700.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/18/78-07/17/96	25	2.301	2.354	3.903	1.699	0.39	0.624	1.699	2.	2.651	3.6
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			225.727								
50060	CHLORINE, TOTAL RESIDUAL (MG/L)	04/18/78-06/17/86	5	0.	0.07	0.2	0.	0.01	0.097	**	**	**	**
70507p	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	04/18/78-07/17/96	10	0.015	0.026	0.08	0.005	0.001	0.025	0.005	0.005	0.043	0.077

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0001 Parameter Code: 00094

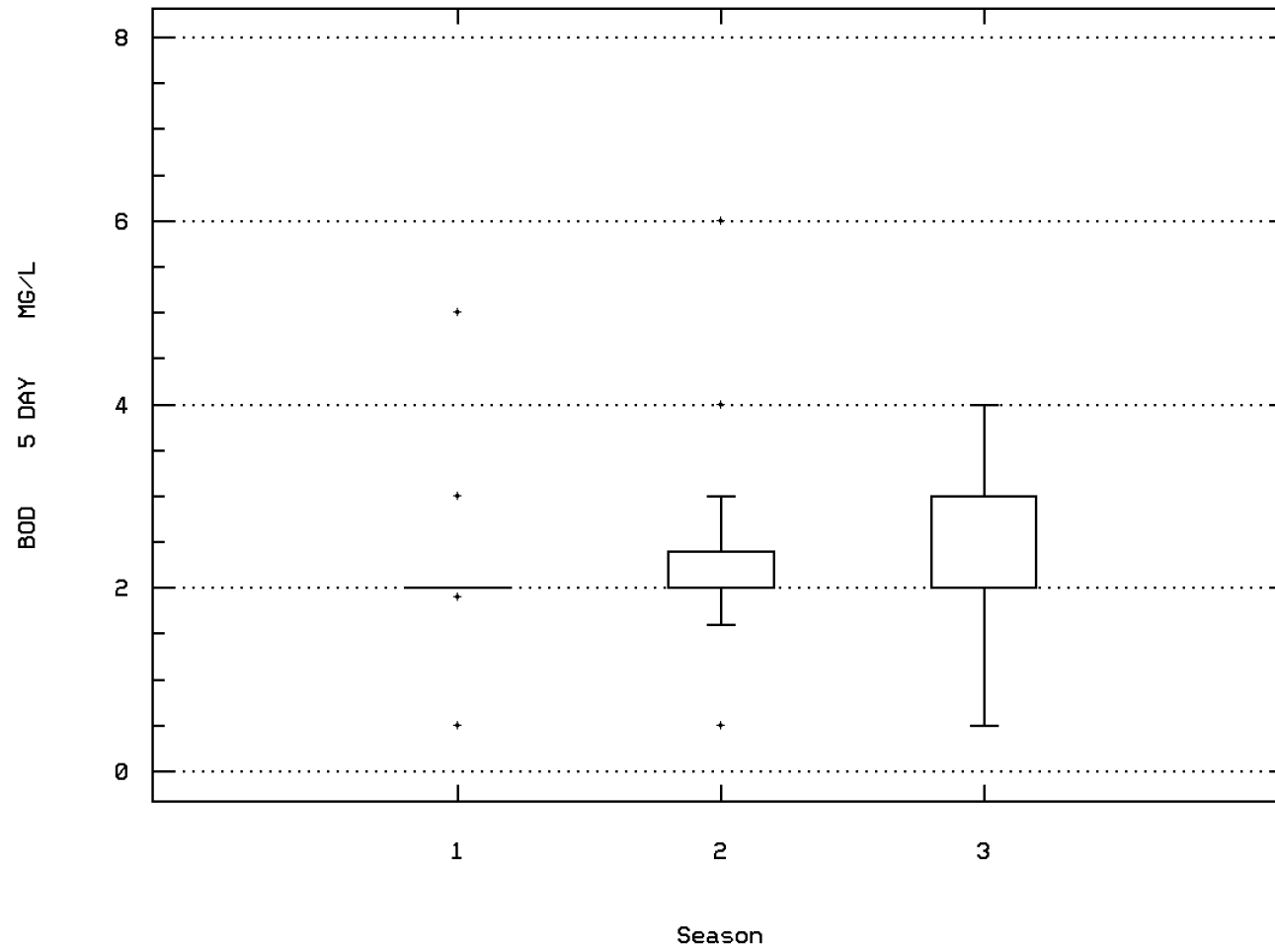
SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00310

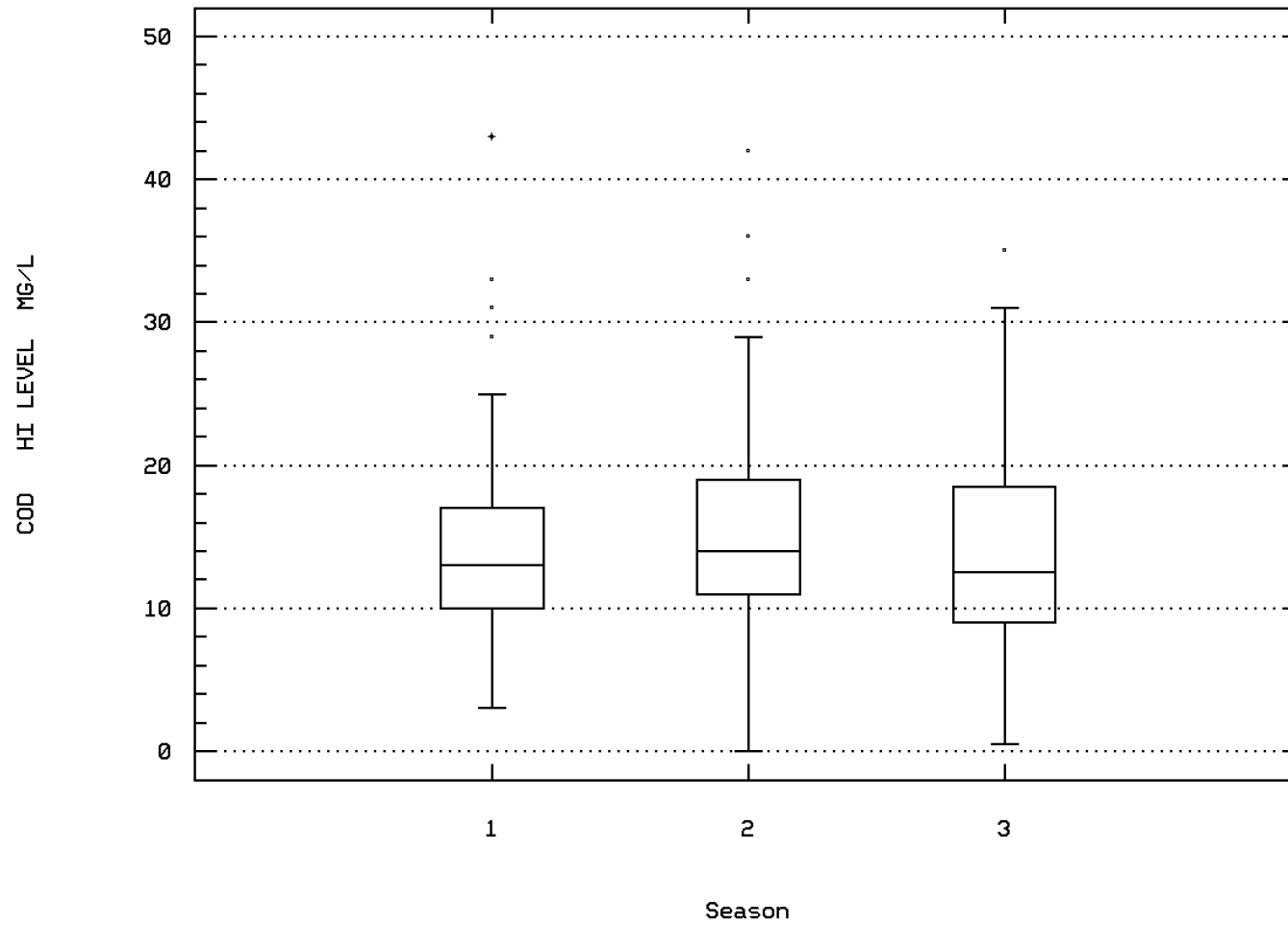
BOD, 5 DAY, 20 DEG C



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00340

COD, .25N K2CR207

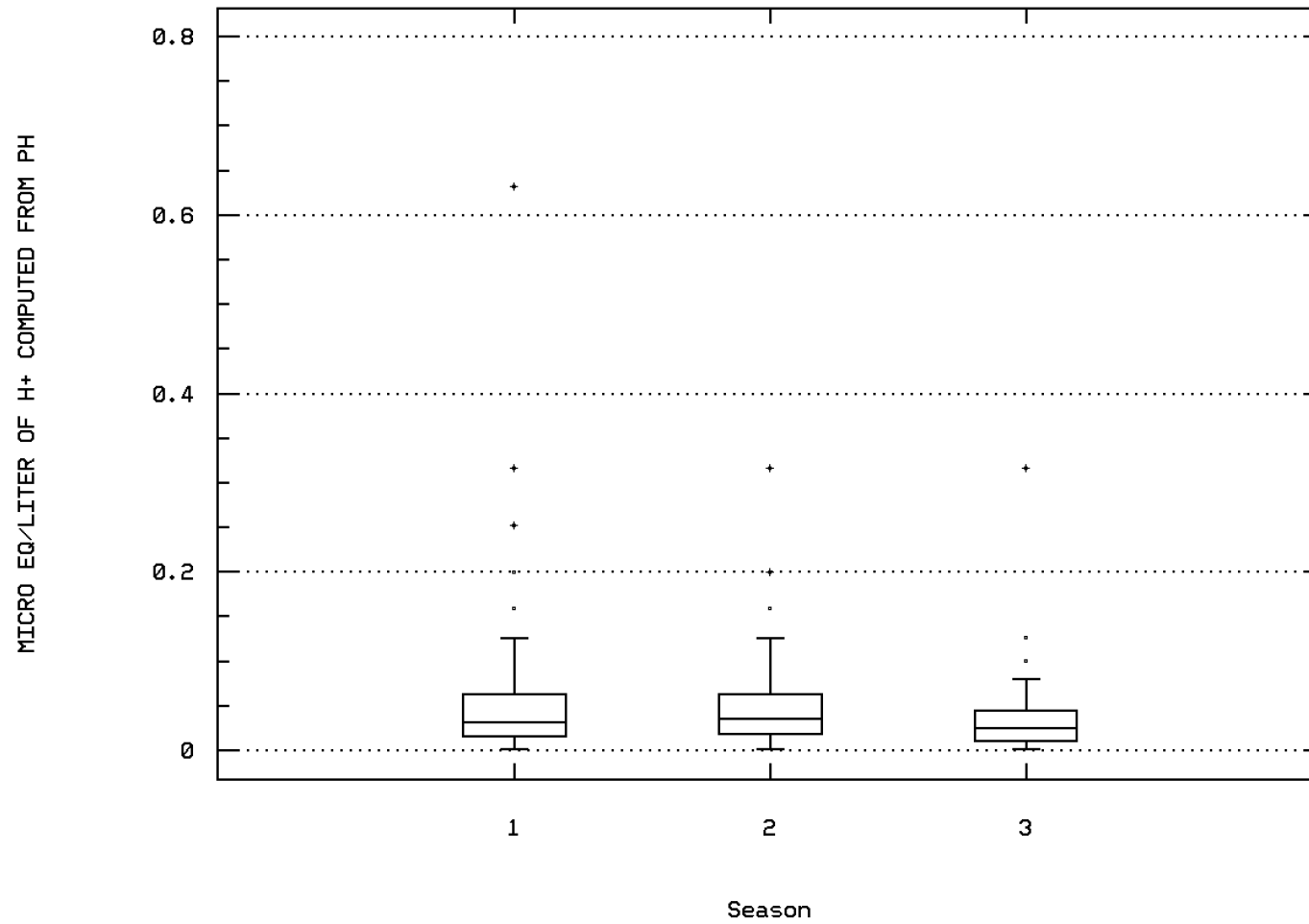


RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY



Station: MANA0001 Parameter Code: 00400

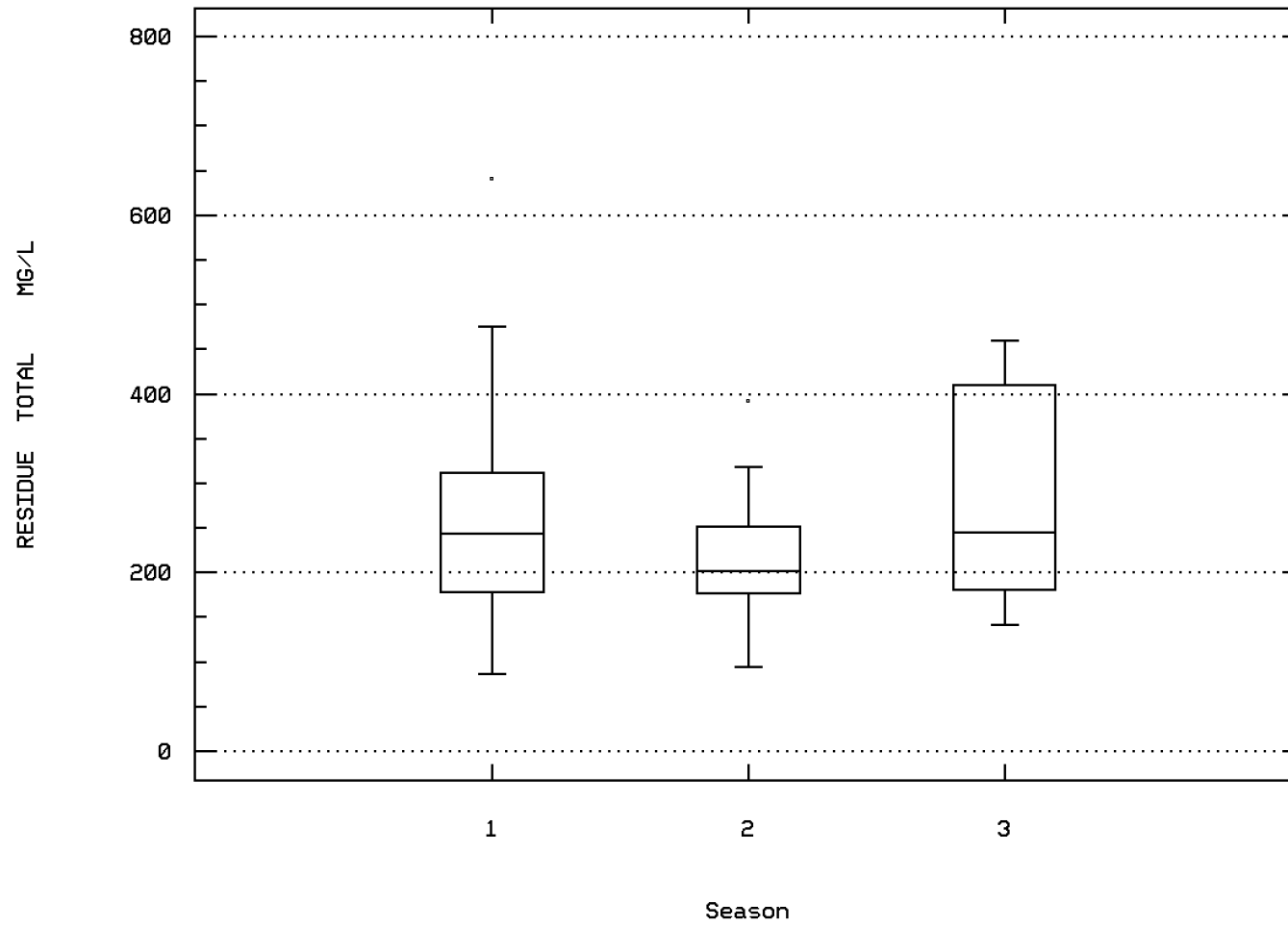
MICRO EQ/LITER OF H+ COMPUTED FROM PH



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00500

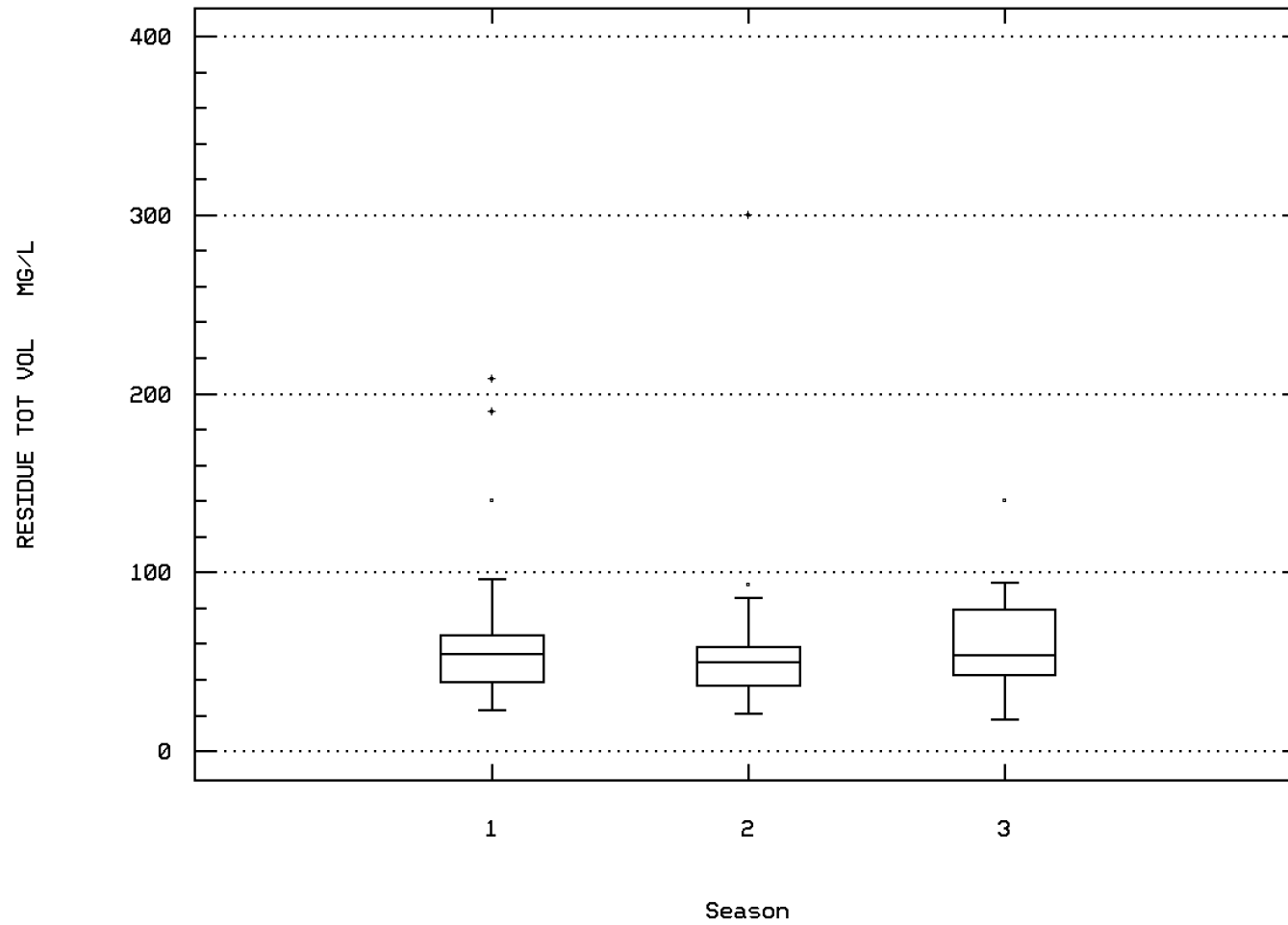
RESIDUE, TOTAL (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00505

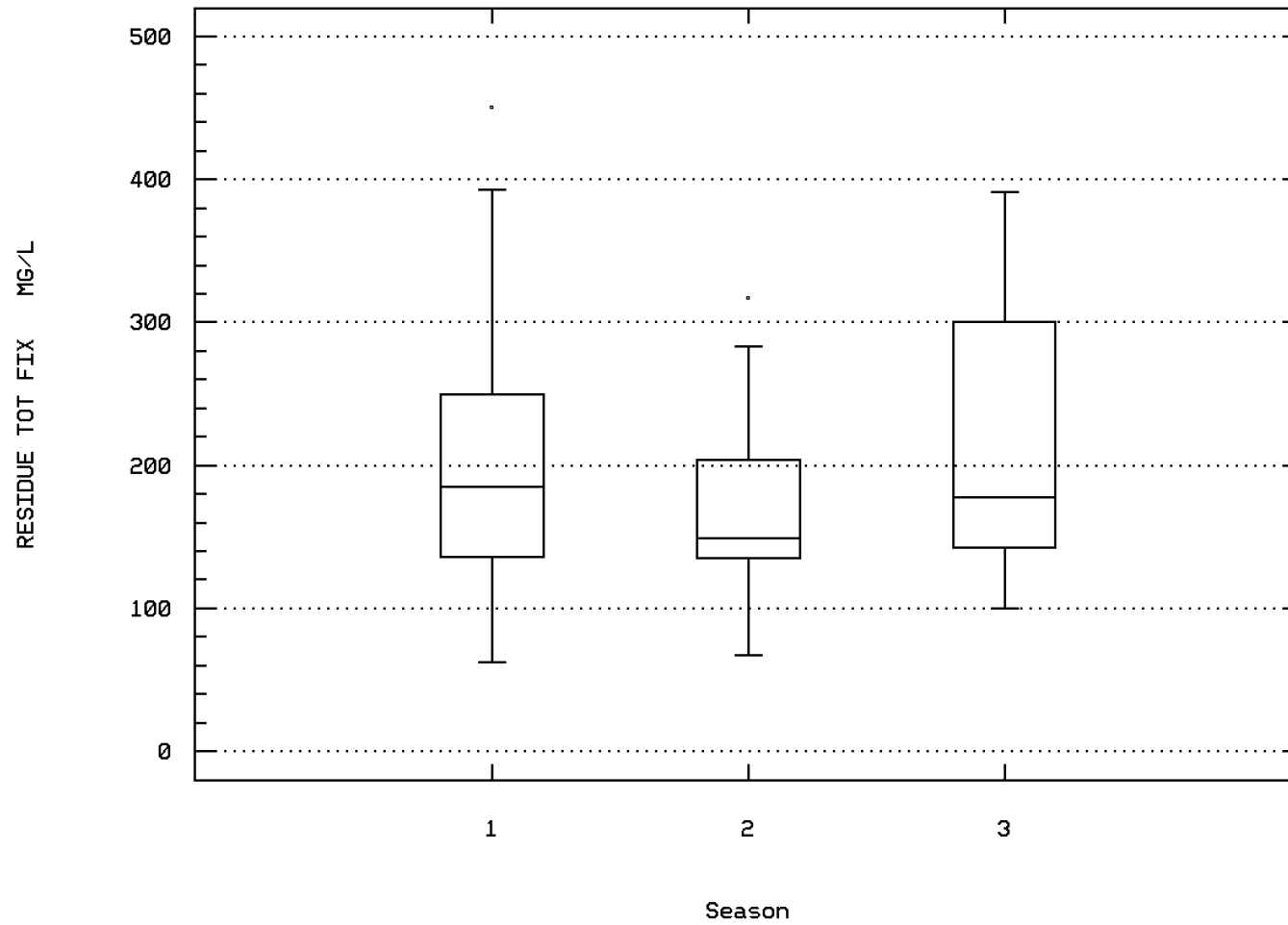
RESIDUE, TOTAL VOLATILE (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00510

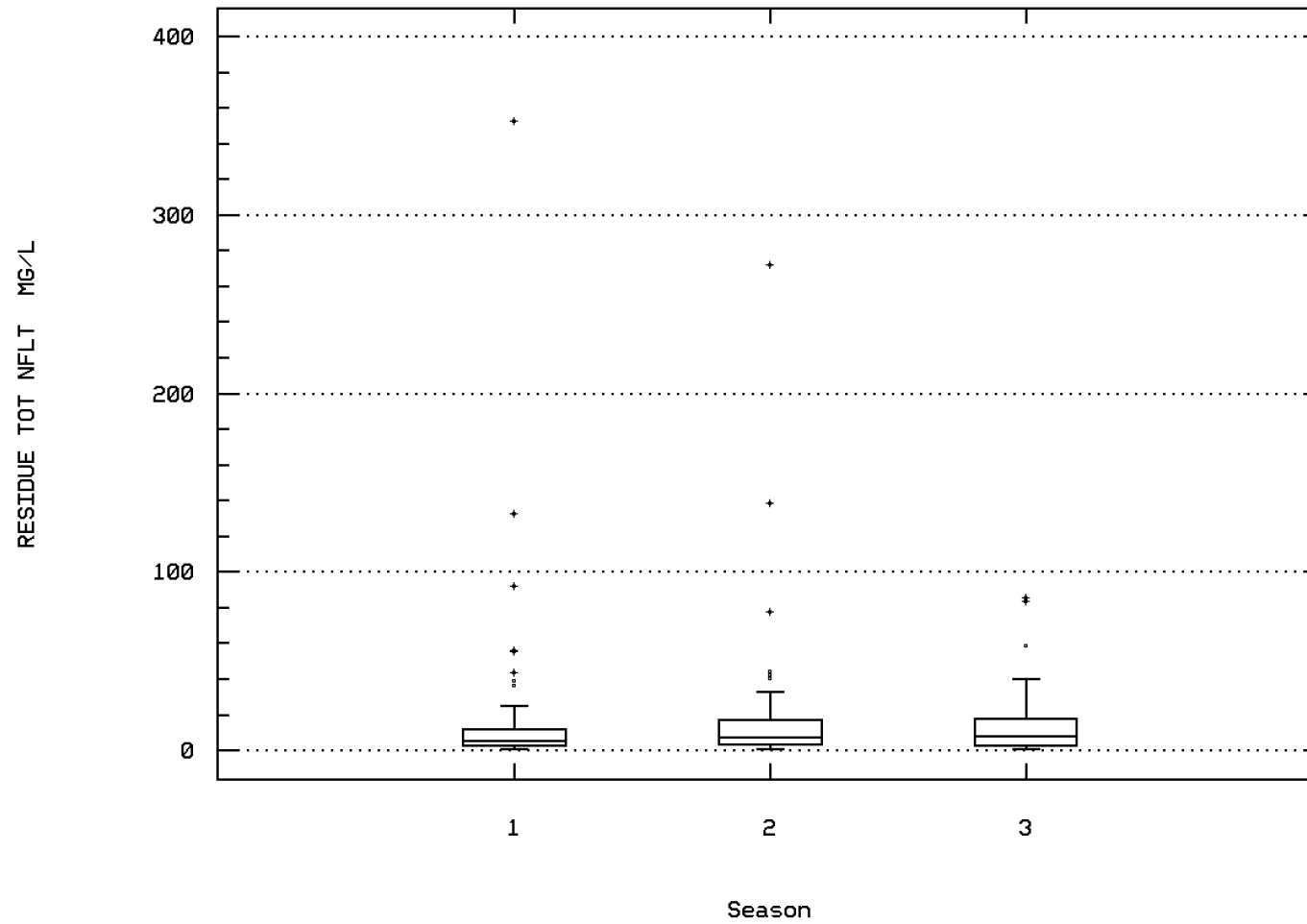
RESIDUE, TOTAL FIXED (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00530

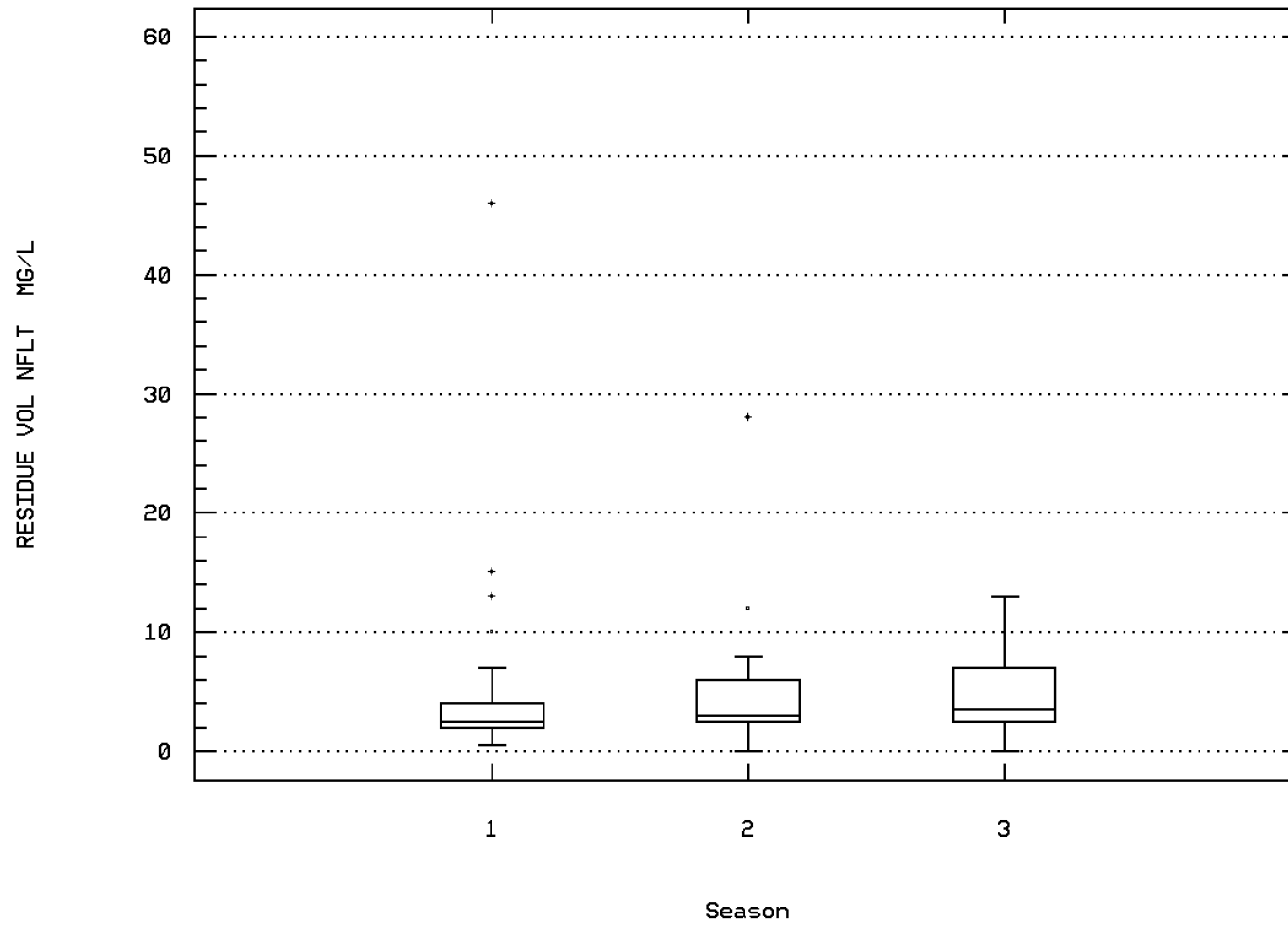
RESIDUE, TOTAL NONFILTRABLE (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00535

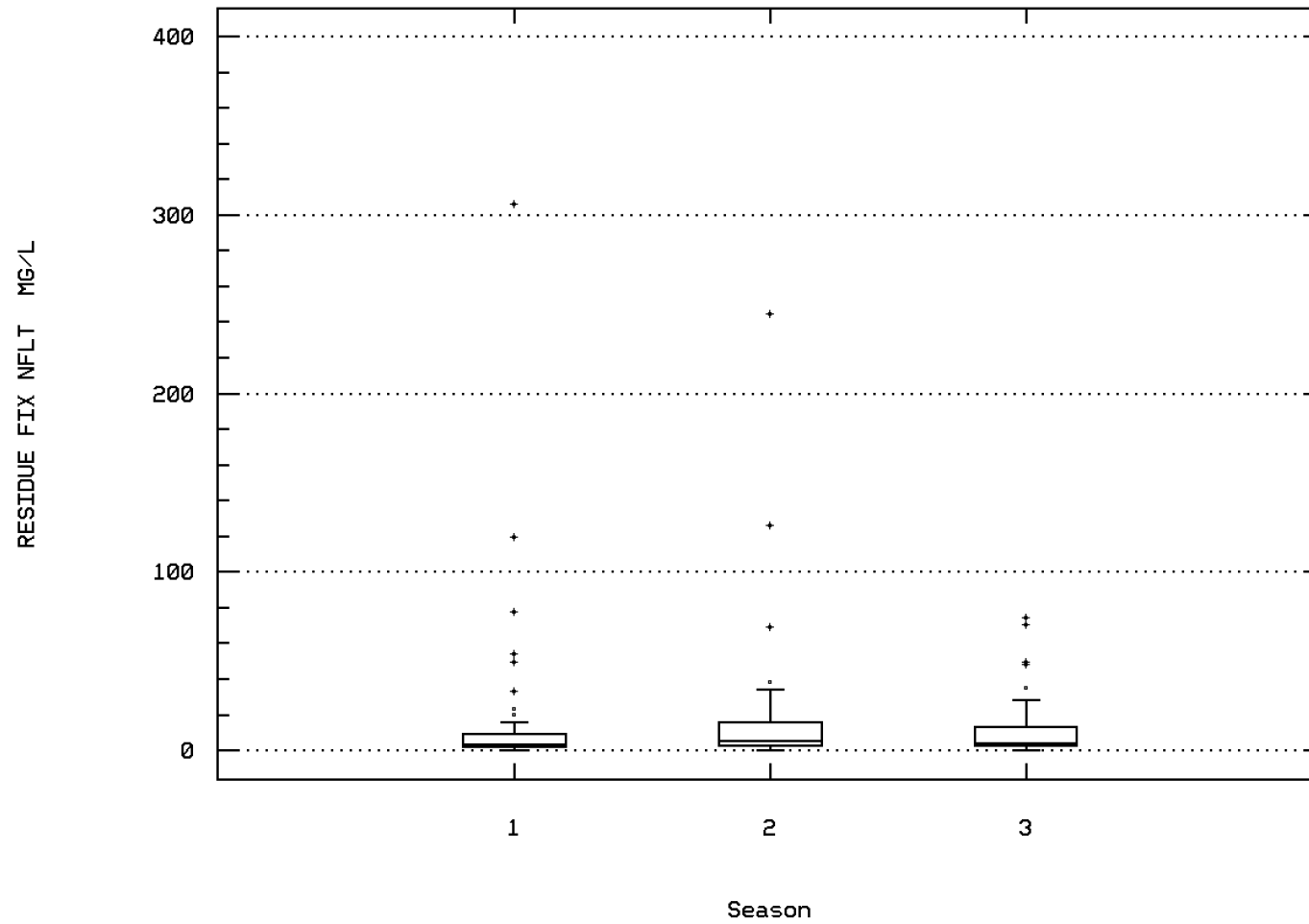
RESIDUE, VOLATILE NONFILTRABLE (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00540

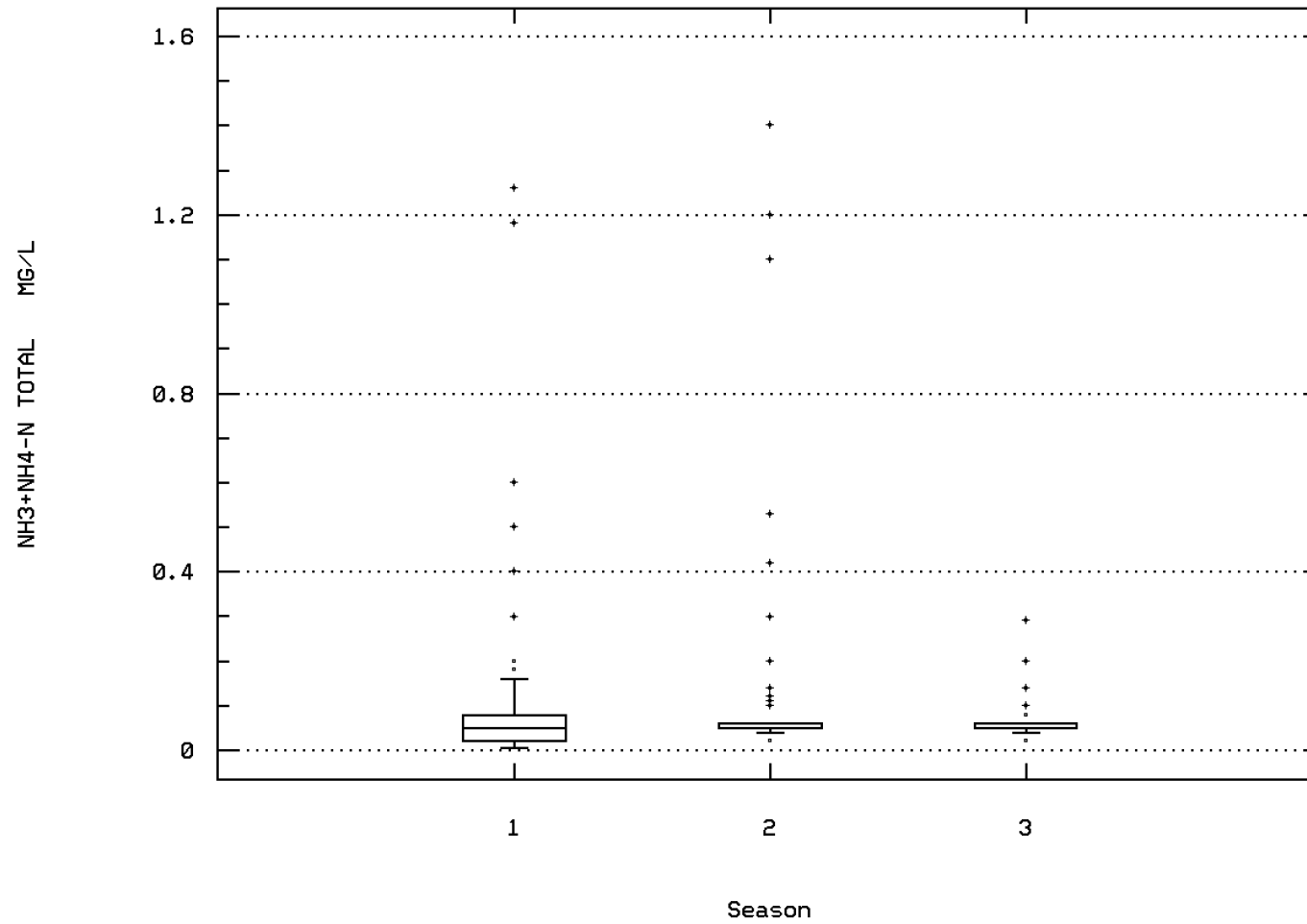
RESIDUE, FIXED NONFILTRABLE (MG/L)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00610

NITROGEN, AMMONIA, TOTAL (MG/L AS N)

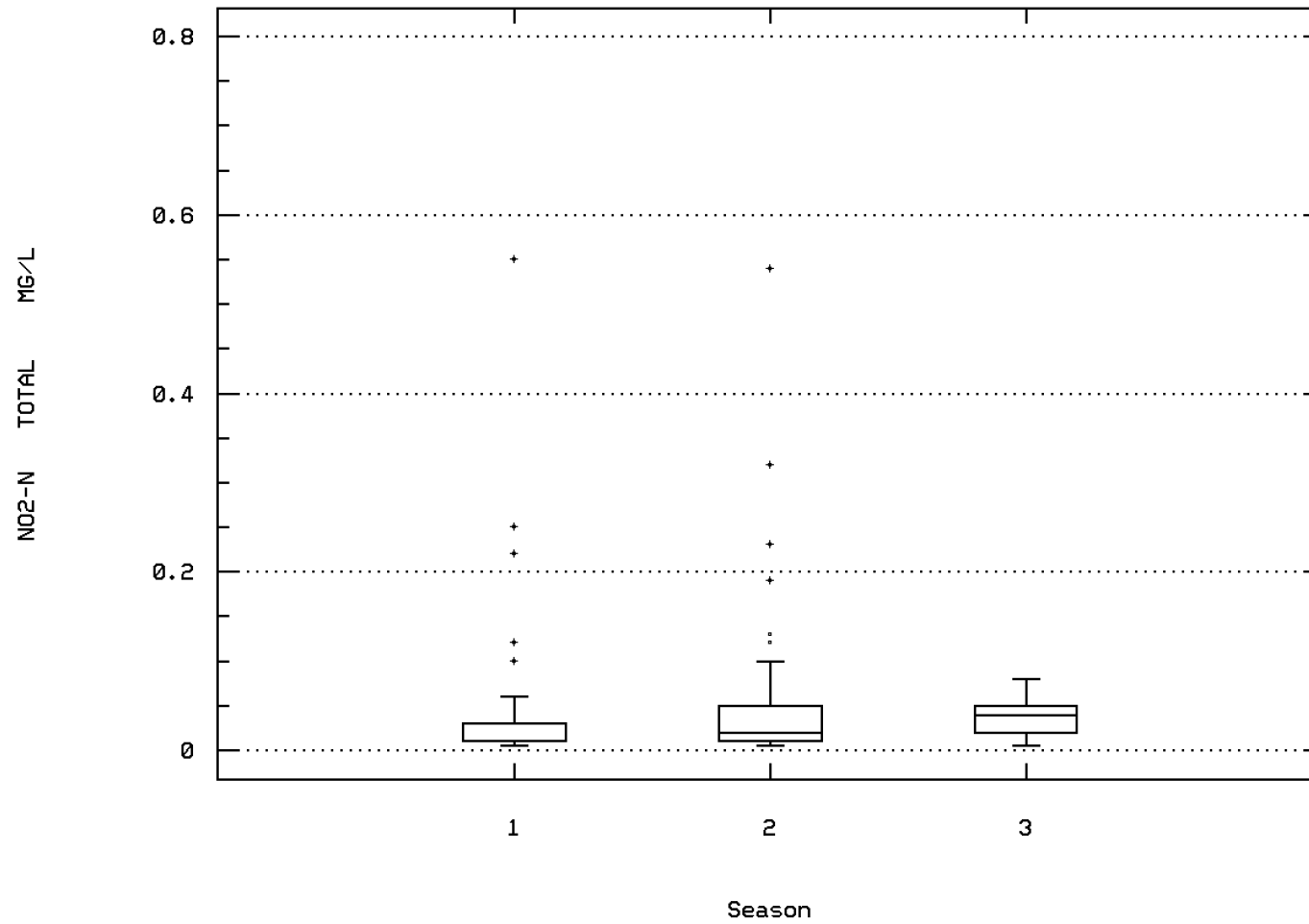


RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY



Station: MANA0001 Parameter Code: 00615

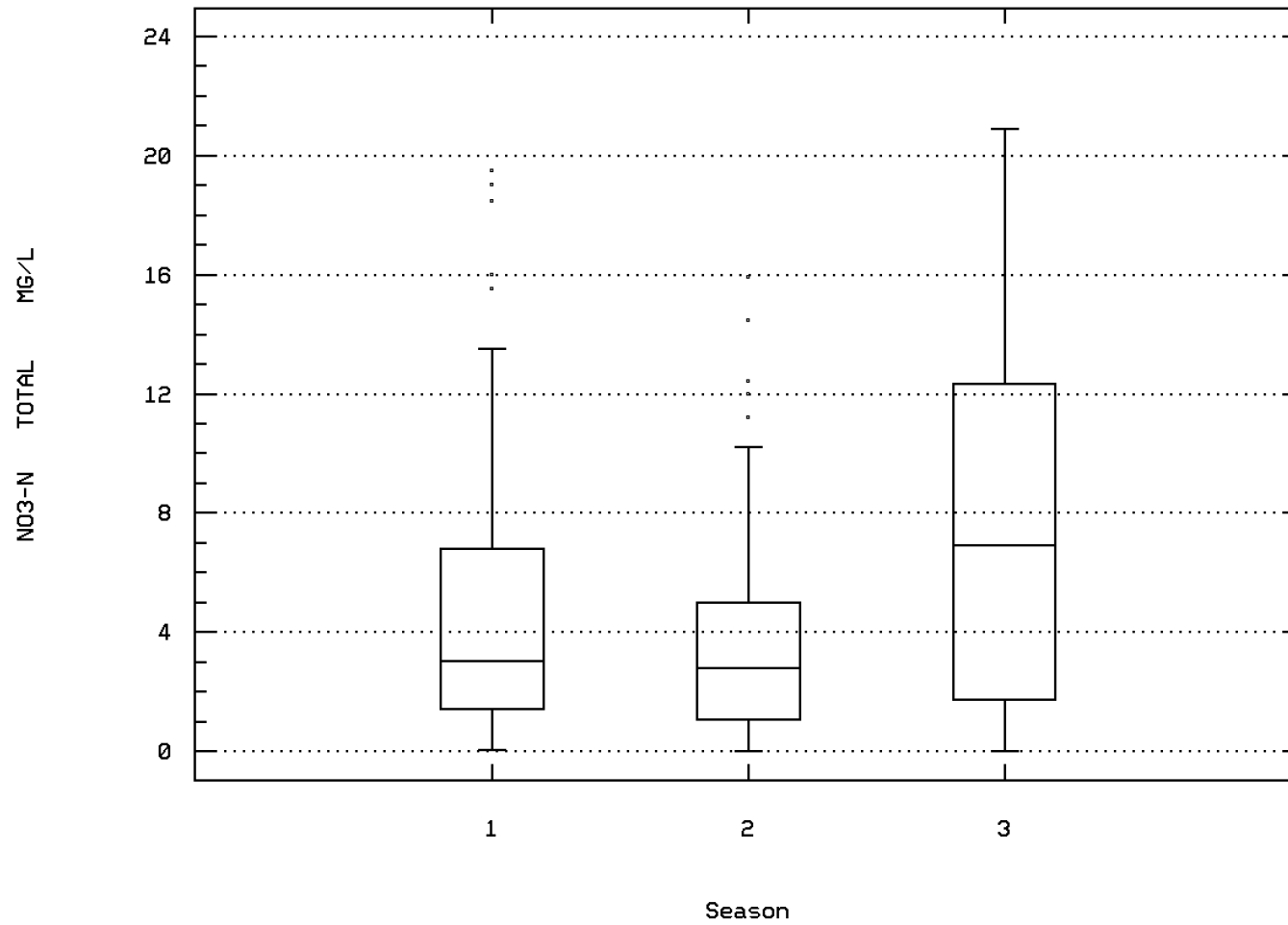
NITRITE NITROGEN, TOTAL (MG/L AS N)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00620

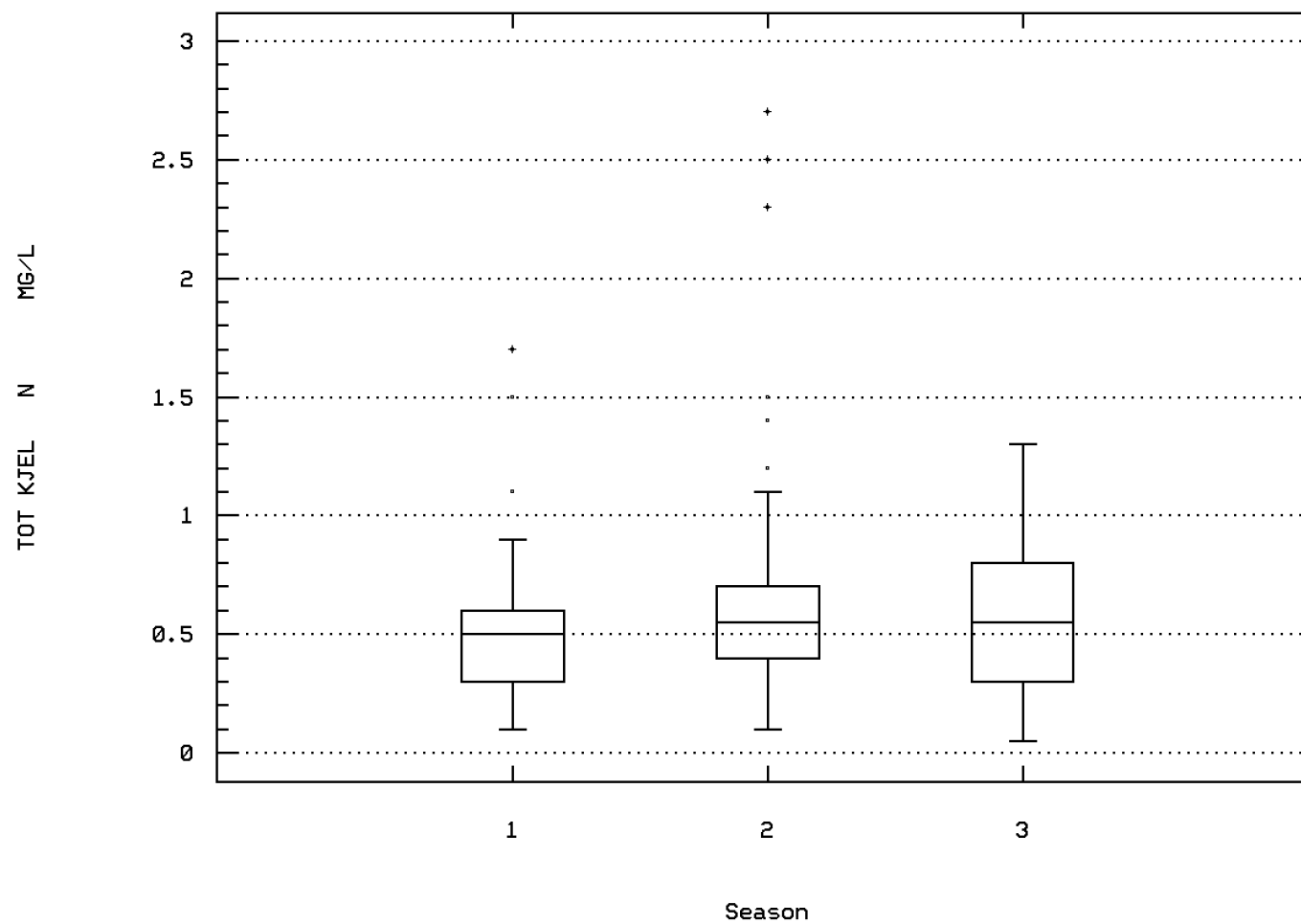
NITRATE NITROGEN, TOTAL (MG/L AS N)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00625

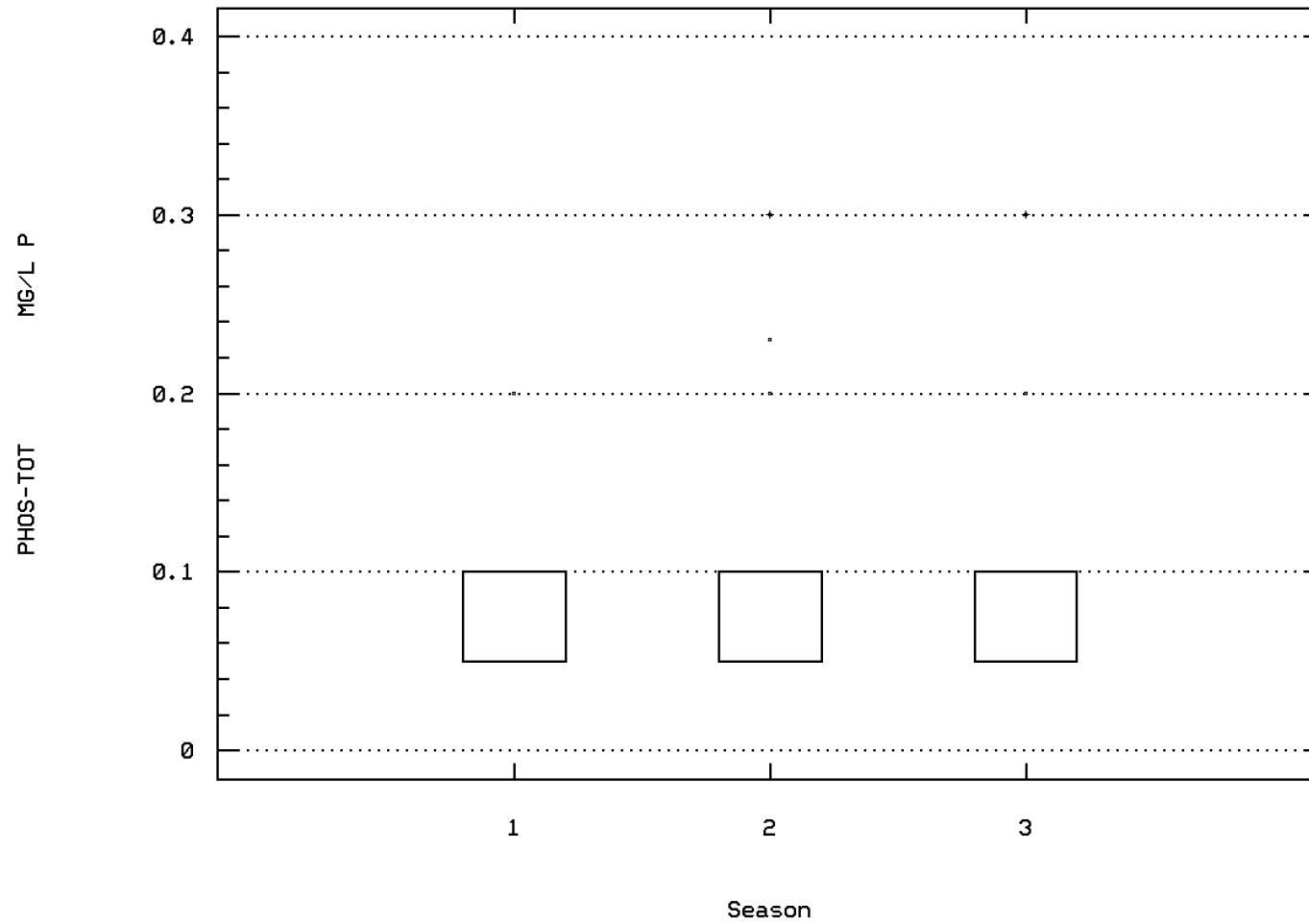
NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00665

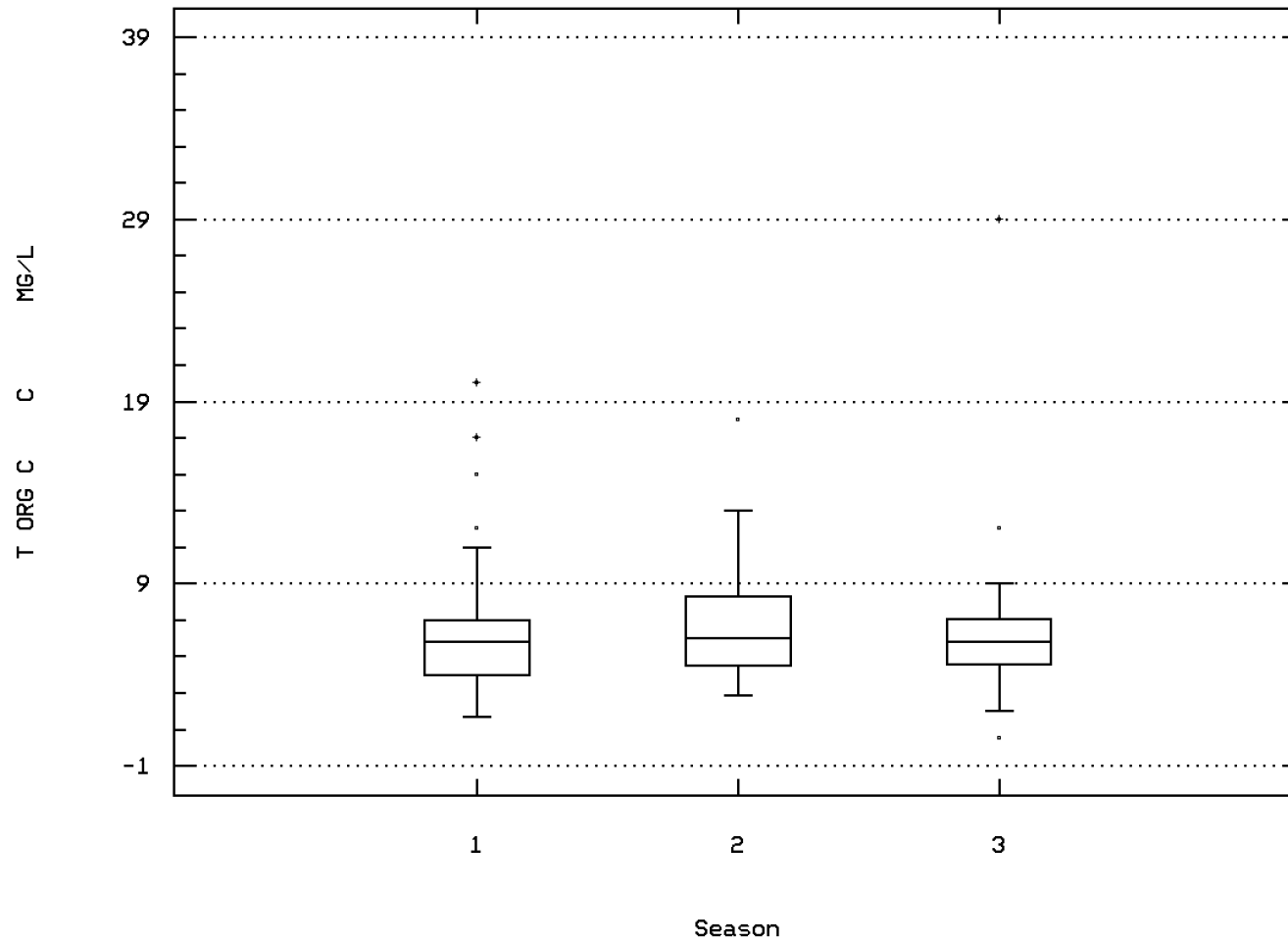
PHOSPHORUS, TOTAL (MG/L AS P)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 00680

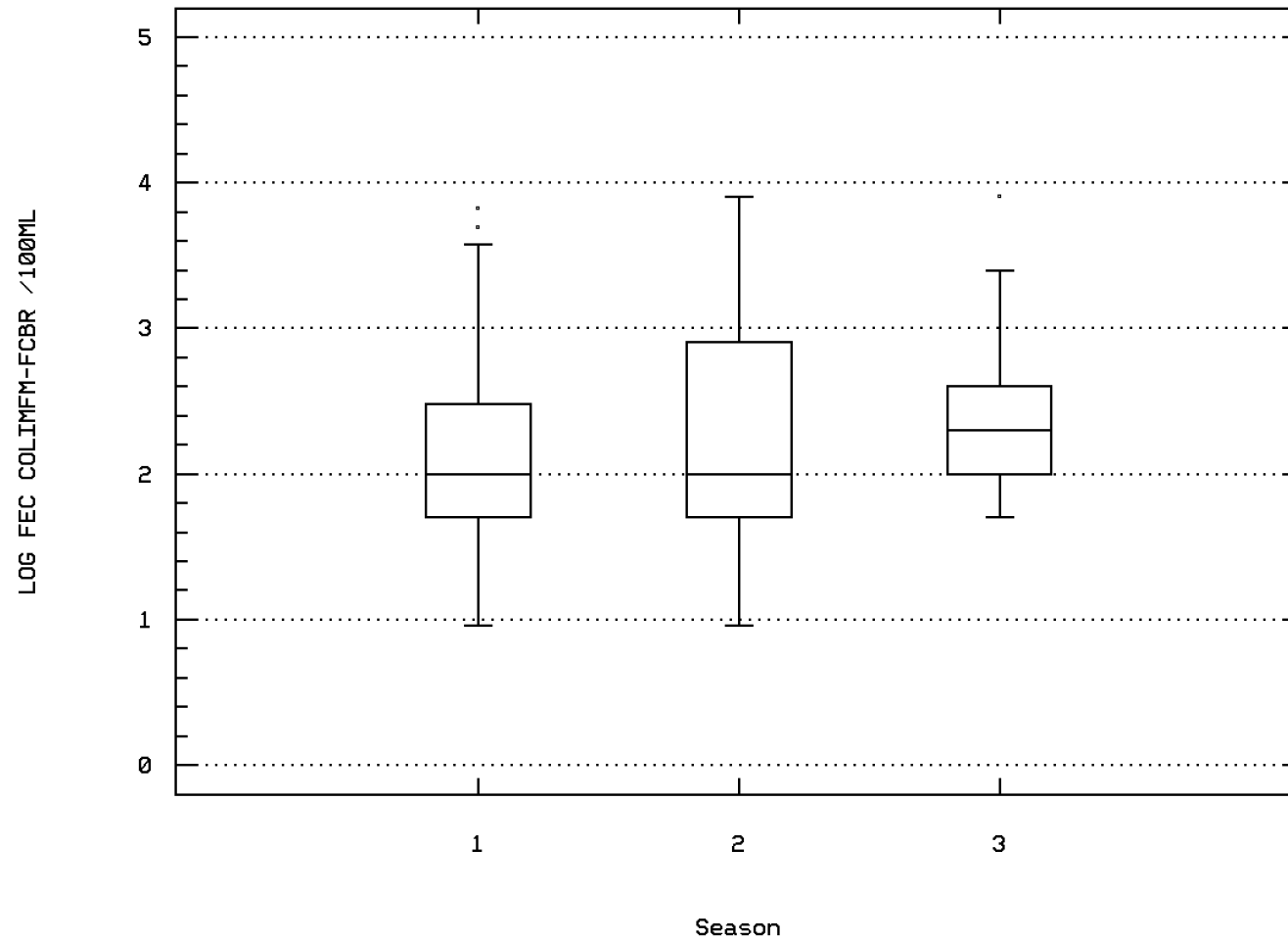
CARBON, TOTAL ORGANIC (MG/L AS C)



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 31616

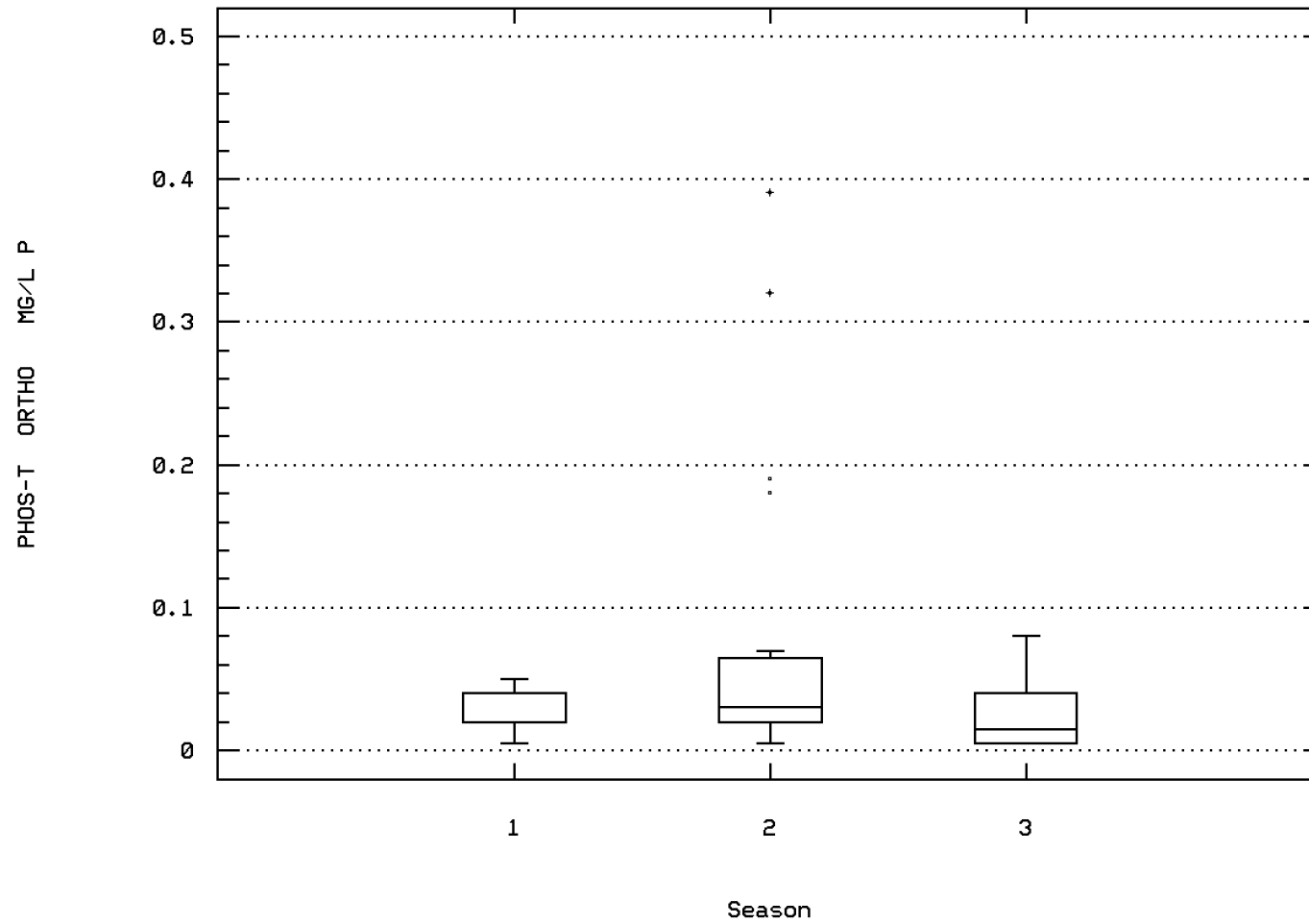
LOG FECAL COLIFORM, MEMBR FILTER, M-FC BR



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

Station: MANA0001 Parameter Code: 70507

PHOSPHORUS,IN TOTAL ORTHOPHOSPHATE (MG/



RT. 28 PRINCE WILLIAM/FAIRFAX COUNTY

## Station Inventory for Station: MANA0002

NPS Station ID: MANA0002  
 Location: BIG ROCKY RUN NEAR CENTREVILLE, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin:  
 Minor Basin:  
 RF1 Index: 02070010  
 RF3 Index: 02070008020302.17  
 Description:

LAT/LON: 38.836393/ -77.450005

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 2.22

Agency: 112WRD  
 FIPS State/County: 51059 VIRGINIA/FAIRFAX  
 STORET Station ID(s): 01656950  
 Within Park Boundary: No

Date Created: 03/11/78

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 18.70  
 Distance from RF3: 0.03

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0002

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/30/77-08/30/77	1	21.5	21.5	21.5	21.5	0.	0.	**	**	**	**
00061 FLOW, STREAM, INSTANTANEOUS CFS	08/30/77-08/30/77	1	0.7	0.7	0.7	0.7	0.	0.	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	08/30/77-08/30/77	1	20.	20.	20.	20.	0.	0.	**	**	**	**
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/30/77-08/30/77	1	200.	200.	200.	200.	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	08/30/77-08/30/77	1	38.	38.	38.	38.	0.	0.	**	**	**	**
00440 BICARBONATE ION (MG/L AS HCO3)	08/30/77-08/30/77	1	46.	46.	46.	46.	0.	0.	**	**	**	**
00613 NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/30/77-08/30/77	1	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/30/77-08/30/77	1	0.86	0.86	0.86	0.86	0.	0.	**	**	**	**
00631 NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/30/77-08/30/77	1	0.9	0.9	0.9	0.9	0.	0.	**	**	**	**
00660 PHOSPHATE, ORTHO (MG/L AS PO4)	08/30/77-08/30/77	1	0.55	0.55	0.55	0.55	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/30/77-08/30/77	1	0.18	0.18	0.18	0.18	0.	0.	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	08/30/77-08/30/77	1	56.	56.	56.	56.	0.	0.	**	**	**	**
00902 HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/30/77-08/30/77	1	19.	19.	19.	19.	0.	0.	**	**	**	**
00915 CALCIUM, DISSOLVED (MG/L AS Ca)	08/30/77-08/30/77	1	16.	16.	16.	16.	0.	0.	**	**	**	**
00925 MAGNESIUM, DISSOLVED (MG/L AS MG)	08/30/77-08/30/77	1	4.	4.	4.	4.	0.	0.	**	**	**	**
00930 SODIUM, DISSOLVED (MG/L AS Na)	08/30/77-08/30/77	1	18.	18.	18.	18.	0.	0.	**	**	**	**
00931 SODIUM ADSORPTION RATIO	08/30/77-08/30/77	1	1.	1.	1.	1.	0.	0.	**	**	**	**
00932 SODIUM, PERCENT	08/30/77-08/30/77	1	38.	38.	38.	38.	0.	0.	**	**	**	**
00935 POTASSIUM, DISSOLVED (MG/L AS K)	08/30/77-08/30/77	1	5.8	5.8	5.8	5.8	0.	0.	**	**	**	**
00940 CHLORIDE, TOTAL IN WATER MG/L	08/30/77-08/30/77	1	30.	30.	30.	30.	0.	0.	**	**	**	**
00945 SULFATE, TOTAL (MG/L AS SO4)	08/30/77-08/30/77	1	17.	17.	17.	17.	0.	0.	**	**	**	**
00950 FLUORIDE, DISSOLVED (MG/L AS F)	08/30/77-08/30/77	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00955 SILICA, DISSOLVED (MG/L AS SiO2)	08/30/77-08/30/77	1	9.3	9.3	9.3	9.3	0.	0.	**	**	**	**
01046 IRON, DISSOLVED (UG/L AS FE)	08/30/77-08/30/77	1	70.	70.	70.	70.	0.	0.	**	**	**	**
70300 RESIDUE, TOTAL FILTRABLE (DRIED AT 180C), MG/L	08/30/77-08/30/77	1	127.	127.	127.	127.	0.	0.	**	**	**	**
70301 SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/30/77-08/30/77	1	128.	128.	128.	128.	0.	0.	**	**	**	**
70302 SOLIDS, DISSOLVED-TONS PER DAY	08/30/77-08/30/77	1	0.23	0.23	0.23	0.23	0.	0.	**	**	**	**
70303 SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/30/77-08/30/77	1	0.17	0.17	0.17	0.17	0.	0.	**	**	**	**
71851 NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/30/77-08/30/77	1	3.8	3.8	3.8	3.8	0.	0.	**	**	**	**
71856 NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/30/77-08/30/77	1	0.03	0.03	0.03	0.03	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot



### EPA Water Quality Criteria Analysis for Station: MANA0002

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00613	NITRITE NITROGEN, DISSOLVED AS N	1.	1	0	0.00							1	0	0.00			
00618	NITRATE NITROGEN, DISSOLVED AS N	10.	1	0	0.00							1	0	0.00			
00631	NITRITE PLUS NITRATE, DISS. 1 DET.	10.	1	0	0.00							1	0	0.00			
00940	CHLORIDE, TOTAL IN WATER	860.	1	0	0.00							1	0	0.00			
	Drinking Water	250.	1	0	0.00							1	0	0.00			
00945	SULFATE, TOTAL (AS SO4)	250.	1	0	0.00							1	0	0.00			
00950	FLUORIDE, DISSOLVED AS F	4.	1	0	0.00							1	0	0.00			
71851	NITRATE NITROGEN, DISSOLVED (AS NO3)	44.	1	0	0.00							1	0	0.00			
71856	NITRITE NITROGEN, DISSOLVED (AS NO2)	3.3	1	0	0.00							1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0003

NPS Station ID: MANA0003  
 Location: RT. 29/211 BRIDGE  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:

LAT/LON: 38.836393/ -77.450005

Agency: 21VASWCB  
 FIPS State/County: 51059 VIRGINIA/FAIRFAX  
 STORET Station ID(s): 1ABIR000.76 /VA1A07AX0015/VA1A3X0015  
 Within Park Boundary: No

Date Created: / /

HUC: 02070010  
 Major Basin: 02-NORTH-ATLANTIC  
 Minor Basin: 1-POTOMAC-SHENANDOAH  
 RF1 Index: 02070010053  
 RF3 Index: 02070010004412.27

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 3.420  
 RF3 Mile Point: 12.27

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.00

On/Off RF1: OFF  
 On/Off RF3:

Description:  
 VIRGINIA STATE WATER CONTROL BOARD AMBIENT MONITORING BASIN: 1A POTOMAC REGION: 3 NORTHERN VIRGINIA  
 RIVER: BIG ROCKY RUN SECTION: 07A TOPO MAP #: 0028 TOPO MAP NAME: MANASSAS, VA

### Parameter Inventory for Station: MANA0003

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-06/26/79	43	13.	13.565	26.	0.	62.482	7.905	0.78	6.7	20.6	24.
00300 OXYGEN, DISSOLVED MG/L	10/07/74-06/26/79	43	8.8	8.944	13.6	3.8	5.371	2.317	5.86	7.7	10.2	12.26
00310 BOD, 5 DAY, 20 DEG C MG/L	03/31/75-06/26/79	38	1.	2.053	14.	1.	4.97	2.229	1.	1.	3.	4.
00400 PH (STANDARD UNITS)	10/07/74-06/26/79	43	7.2	7.212	7.8	6.8	0.051	0.226	6.9	7.	7.3	7.5
00400 CONVERTED PH (STANDARD UNITS)	10/07/74-06/26/79	43	7.2	7.155	7.8	6.8	0.054	0.233	6.9	7.	7.3	7.5
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-06/26/79	43	0.063	0.07	0.158	0.016	0.001	0.037	0.032	0.05	0.1	0.126
00403 PH, LAB, STANDARD UNITS SU	03/15/77-03/15/77	1	7.	7.	7.	7.	0.	0.	**	**	**	**
00403 CONVERTED PH, LAB, STANDARD UNITS	03/15/77-03/15/77	1	7.	7.	7.	7.	0.	0.	**	**	**	**
00403 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/15/77-03/15/77	1	0.1	0.1	0.1	0.1	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	03/15/77-03/15/77	1	56.	56.	56.	56.	0.	0.	**	**	**	**
00500 RESIDUE, TOTAL (MG/L)	03/31/75-06/26/79	4	152.	180.	282.	134.	4720.	68.702	**	**	**	**
00505 RESIDUE, TOTAL VOLATILE (MG/L)	03/31/75-06/26/79	4	83.5	94.	136.	73.	810.	28.46	**	**	**	**
00510 RESIDUE, TOTAL FIXED (MG/L)	03/31/75-06/26/79	5	52.	73.6	197.	14.	5244.3	72.418	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/31/75-06/26/79	35	6.	6.214	30.	0.5	32.313	5.684	0.5	4.	7.	13.6
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/31/75-06/26/79	36	2.	2.375	6.	0.	3.577	1.891	0.	0.5	4.	5.
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	03/31/75-06/26/79	36	3.	4.153	26.	0.	25.469	5.047	0.	0.625	5.75	10.3
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-06/26/79	41	0.1	0.273	2.399	0.05	0.195	0.441	0.05	0.05	0.3	0.78
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-06/26/79	41	0.02	0.034	0.2	0.005	0.002	0.043	0.005	0.005	0.05	0.07
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	10/07/74-09/28/76	13	2.099	3.113	8.449	1.099	5.441	2.333	1.191	1.669	4.2	7.869
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-06/26/79	40	0.4	0.522	1.399	0.05	0.125	0.353	0.1	0.3	0.8	1.089
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	10/20/76-06/26/79	28	1.25	1.346	3.5	0.025	1.141	1.068	0.118	0.405	2.025	3.3
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	03/31/75-06/26/79	38	7.5	7.895	19.	5.	6.745	2.597	5.	6.	9.	10.1
00940 CHLORIDE,TOTAL IN WATER MG/L	03/15/77-03/15/77	1	20.	20.	20.	20.	0.	0.	**	**	**	**
01002 ARSENIC, TOTAL (UG/L AS AS)	09/30/75-04/19/79	6 ##	1.	1.25	2.	1.	0.175	0.418	**	**	**	**
01027 CADMIUM, TOTAL (UG/L AS CD)	09/30/75-04/19/79	6 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01034 CHROMIUM, TOTAL (UG/L AS CR)	09/30/75-04/19/79	6 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01042 COPPER, TOTAL (UG/L AS CU)	09/30/75-04/19/79	6 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01045 IRON, TOTAL (UG/L AS FE)	11/08/78-04/19/79	2	750.	750.	1000.	500.	125000.	353.553	**	**	**	**
01051 LEAD, TOTAL (UG/L AS PB)	09/30/75-04/19/79	6 ##	2.	2.417	6.	0.5	4.242	2.06	**	**	**	**
01055 MANGANESE, TOTAL (UG/L AS MN)	11/08/78-04/19/79	2	305.	305.	530.	80.	101250.	318.198	**	**	**	**
01065 NICKEL, DISSOLVED (UG/L AS NI)	09/30/75-04/19/79	6 ##	50.	42.5	50.	5.	337.5	18.371	**	**	**	**
01092 ZINC, TOTAL (UG/L AS ZN)	09/30/75-04/19/79	6 ##	7.5	7.5	10.	5.	7.5	2.739	**	**	**	**
31505 COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	04/28/77-04/28/77	1	4300.	4300.	4300.	4300.	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0003

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
31505 LOG COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 3150	04/28/77-04/28/77	1	3.633	3.633	3.633	3.633	0.	0.	**	**	**	**
31505 GM COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506	GEOMETRIC MEAN =			4300.								
31616 FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	10/07/74-06/26/79	41 ##	50.	470.732	4700.	50.	1013746.951	1006.85	50.	50.	200.	2100.
31616 LOG FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	10/07/74-06/26/79	41 ##	1.699	2.118	3.672	1.699	0.359	0.599	1.699	1.699	2.301	3.312
31616 GM FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	GEOMETRIC MEAN =			131.346								
50060 CHLORINE, TOTAL RESIDUAL (MG/L)	03/31/75-06/26/79	11	0.	0.045	0.3	0.	0.011	0.104	0.	0.	0.	0.28
70505 PHOSPHATE,TOTAL,COLORIMETRIC METHOD (MG/L AS P)	10/07/74-06/26/79	40	0.1	0.281	2.6	0.05	0.219	0.468	0.05	0.05	0.2	0.69
70507 PHOSPHORUS,IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-06/26/79	40	0.135	0.202	1.199	0.005	0.058	0.24	0.011	0.07	0.208	0.582
71900 MERCURY, TOTAL (UG/L AS HG)	09/30/75-04/19/79	6 ##	0.25	0.217	0.25	0.15	0.003	0.052	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0003

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	43	2	0.05	17	2	0.12	18	0	0.00	8	0	0.00			
00400 PH	Other-Hi Lim.	9.	43	0	0.00	17	0	0.00	18	0	0.00	8	0	0.00			
	Other-Lo Lim.	6.5	43	0	0.00	17	0	0.00	18	0	0.00	8	0	0.00			
00403 PH, LAB	Other-Hi Lim.	9.	1	0	0.00				1	0	0.00						
	Other-Lo Lim.	6.5	1	0	0.00				1	0	0.00						
00615 NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	41	0	0.00	15	0	0.00	18	0	0.00	8	0	0.00			
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	13	0	0.00	4	0	0.00	5	0	0.00	4	0	0.00			
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	28	0	0.00	11	0	0.00	13	0	0.00	4	0	0.00			
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	1	0	0.00				1	0	0.00						
	Drinking Water	250.	1	0	0.00				1	0	0.00						
01002 ARSENIC, TOTAL	Fresh Acute	360.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
	Drinking Water	50.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
01027 CADMIUM, TOTAL	Fresh Acute	3.9	0 &	0	0.00												
	Drinking Water	5.	0 &	0	0.00												
01034 CHROMIUM, TOTAL	Drinking Water	100.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
01042 COPPER, TOTAL	Fresh Acute	18.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
	Drinking Water	1300.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
01051 LEAD, TOTAL	Fresh Acute	82.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
	Drinking Water	15.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
01065 NICKEL, DISSOLVED	Fresh Acute	1400.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
	Drinking Water	100.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
01092 ZINC, TOTAL	Fresh Acute	120.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
	Drinking Water	5000.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
31505 COLIFORM, TOTAL, MPN, CONF. TEST, 35C	Other-Hi Lim.	1000.	1	1	1.00				1	1	1.00						
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	41	14	0.34	16	3	0.19	18	8	0.44	7	3	0.43			
50060 CHLORINE, TOTAL RESIDUAL	Fresh Acute	0.019	11	2	0.18	3	0	0.00	5	2	0.40	3	0	0.00			
71900 MERCURY, TOTAL	Fresh Acute	2.4	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
	Drinking Water	2.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0004

NPS Station ID: MANA0004  
 Location: BULL RUN TRIB AT MANASSAS PARK, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin:  
 Minor Basin:  
 RF1 Index: 02070010  
 RF3 Index: 02070010008800.00  
 Description:

LAT/LON: 38.797226/ -77.457781

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 2.81

Agency: 112WRD  
 FIPS State/County: 51059 VIRGINIA/FAIRFAX  
 STORET Station ID(s): 01657010  
 Within Park Boundary: No

Date Created: 01/26/80

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 9.50  
 Distance from RF3: 0.02

On/Off RF1:  
 On/Off RF3:

### Parameter Inventory for Station: MANA0004

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/30/79-08/30/79	1	25.5	25.5	25.5	25.5	0.	0.	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	08/30/79-08/30/79	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/30/79-08/30/79	1	971.	971.	971.	971.	0.	0.	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	08/30/79-08/30/79	1	7.9	7.9	7.9	7.9	0.	0.	**	**	**	**
00400 PH (STANDARD UNITS)	08/30/79-08/30/79	1	6.4	6.4	6.4	6.4	0.	0.	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	08/30/79-08/30/79	1	6.4	6.4	6.4	6.4	0.	0.	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	08/30/79-08/30/79	1	0.398	0.398	0.398	0.398	0.	0.	**	**	**	**
00405 CARBON DIOXIDE (MG/L AS CO2)	08/30/79-08/30/79	1	70.	70.	70.	70.	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	08/30/79-08/30/79	1	90.	90.	90.	90.	0.	0.	**	**	**	**
00440 BICARBONATE ION (MG/L AS HCO3)	08/30/79-08/30/79	1	110.	110.	110.	110.	0.	0.	**	**	**	**
00445 CARBONATE ION (MG/L AS CO3)	08/30/79-08/30/79	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00613 NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/30/79-08/30/79	1	0.09	0.09	0.09	0.09	0.	0.	**	**	**	**
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/30/79-08/30/79	1	4.4	4.4	4.4	4.4	0.	0.	**	**	**	**
00631 NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/30/79-08/30/79	1	4.5	4.5	4.5	4.5	0.	0.	**	**	**	**
00660 PHOSPHATE, ORTHO (MG/L AS PO4)	08/30/79-08/30/79	1	0.03	0.03	0.03	0.03	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/30/79-08/30/79	1	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	08/30/79-08/30/79	1	95.	95.	95.	95.	0.	0.	**	**	**	**
00902 HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/30/79-08/30/79	1	5.	5.	5.	5.	0.	0.	**	**	**	**
00915 CALCIUM, DISSOLVED (MG/L AS Ca)	08/30/79-08/30/79	1	36.	36.	36.	36.	0.	0.	**	**	**	**
00925 MAGNESIUM, DISSOLVED (MG/L AS MG)	08/30/79-08/30/79	1	1.2	1.2	1.2	1.2	0.	0.	**	**	**	**
00930 SODIUM, DISSOLVED (MG/L AS Na)	08/30/79-08/30/79	1	150.	150.	150.	150.	0.	0.	**	**	**	**
00931 SODIUM ADSORPTION RATIO	08/30/79-08/30/79	1	6.7	6.7	6.7	6.7	0.	0.	**	**	**	**
00932 SODIUM, PERCENT	08/30/79-08/30/79	1	75.	75.	75.	75.	0.	0.	**	**	**	**
00933 SODIUM.PLUS POTASSIUM (MG/L)	08/30/79-08/30/79	1	160.	160.	160.	160.	0.	0.	**	**	**	**
00935 POTASSIUM, DISSOLVED (MG/L AS K)	08/30/79-08/30/79	1	9.3	9.3	9.3	9.3	0.	0.	**	**	**	**
00940 CHLORIDE,TOTAL IN WATER MG/L	08/30/79-08/30/79	1	150.	150.	150.	150.	0.	0.	**	**	**	**
00945 SULFATE, TOTAL (MG/L AS SO4)	08/30/79-08/30/79	1	100.	100.	100.	100.	0.	0.	**	**	**	**
00950 FLUORIDE, DISSOLVED (MG/L AS F)	08/30/79-08/30/79	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00955 SILICA, DISSOLVED (MG/L AS SiO2)	08/30/79-08/30/79	1	11.	11.	11.	11.	0.	0.	**	**	**	**
01046 IRON, DISSOLVED (UG/L AS FE)	08/30/79-08/30/79	1	20.	20.	20.	20.	0.	0.	**	**	**	**
70300 RESIDUE,TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/30/79-08/30/79	1	568.	568.	568.	568.	0.	0.	**	**	**	**
70301 SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/30/79-08/30/79	1	532.	532.	532.	532.	0.	0.	**	**	**	**
70303 SOLIDS, DISSOLVED-IONS PER ACRE-FT	08/30/79-08/30/79	1	0.77	0.77	0.77	0.77	0.	0.	**	**	**	**
71851 NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/30/79-08/30/79	1	20.	20.	20.	20.	0.	0.	**	**	**	**
71856 NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/30/79-08/30/79	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0004

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	1	0	0.00							1	0	0.00			
00400 PH	Other-Hi Lim.	9.	1	0	0.00							1	0	0.00			
	Other-Lo Lim.	6.5	1	1	1.00							1	1	1.00			
00613 NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	1	0	0.00							1	0	0.00			
00618 NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	1	0	0.00							1	0	0.00			
00631 NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	1	0	0.00							1	0	0.00			
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	1	0	0.00							1	0	0.00			
	Drinking Water	250.	1	0	0.00							1	0	0.00			
00945 SULFATE, TOTAL (AS SO4)	Drinking Water	250.	1	0	0.00							1	0	0.00			
00950 FLUORIDE, DISSOLVED AS F	Drinking Water	4.	1	0	0.00							1	0	0.00			
71851 NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	1	0	0.00							1	0	0.00			
71856 NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	1	0	0.00							1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0005

NPS Station ID: MANA0005  
 Location: BULL RUN NEAR MANASSAS, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin:  
 Minor Basin:  
 RF1 Index: 02070010  
 RF3 Index: 02070010004412.27  
 Description:

LAT/LON: 38.797782/ -77.457781

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 12.27

Agency: 112WRD  
 FIPS State/County: 51059 VIRGINIA/FAIRFAX  
 STORET Station ID(s): 01657000  
 Within Park Boundary: No

Date Created: / /

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 1.70  
 Distance from RF3: 0.02

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0005

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	4	18.1	15.8	23.	4.	70.16	8.376	**	**	**	**
00060	FLOW, STREAM, MEAN DAILY CFS	3	53.	45.667	75.	9.	1129.333	33.606	**	**	**	**
00065	STAGE, STREAM (FEET)	13	1.65	1.904	4.64	0.62	0.882	0.939	0.964	1.535	1.89	3.88
00080	COLOR (PLATINUM-COBALT UNITS)	4	22.5	23.25	40.	8.	175.583	13.251	**	**	**	**
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	5	205.	214.2	300.	147.	3326.7	57.678	**	**	**	**
00300	OXYGEN, DISSOLVED MG/L	2	7.	7.	7.	7.	0.	0.	**	**	**	**
00400	PH (STANDARD UNITS)	5	7.3	7.152	7.9	6.	0.558	0.747	**	**	**	**
00400	CONVERTED PH (STANDARD UNITS)	5	7.3	6.616	7.9	6.	0.917	0.957	**	**	**	**
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	5	0.05	0.242	1.	0.013	0.181	0.426	**	**	**	**
00405	CARBON DIOXIDE (MG/L AS CO2)	1	85.	85.	85.	85.	0.	0.	**	**	**	**
00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	3	48.	47.333	51.	43.	16.333	4.041	**	**	**	**
00440	BICARBONATE ION (MG/L AS HCO3)	4	60.	63.25	80.	53.	138.25	11.758	**	**	**	**
00445	CARBONATE ION (MG/L AS CO3)	3	0.	0.	0.	0.	0.	0.	**	**	**	**
00515	RESIDUE, TOTAL FILTRABLE (DRIED AT 105C),MG/L	10	8.	16.3	96.	0.	802.678	28.332	0.3	3.75	12.5	87.8
00520	RESIDUE, VOLATILE FILTRABLE (MG/L)	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	11	0.76	0.775	1.98	0.231	0.242	0.492	0.26	0.4	0.816	1.837
00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	13	0.35	0.457	2.05	0.01	0.297	0.545	0.014	0.114	0.502	1.62
00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	13	2.15	1.987	3.63	0.47	1.165	1.079	0.518	1.02	2.715	3.63
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	8	1.338	1.991	4.85	0.967	1.732	1.316	**	**	**	**
00631	NITRITE PLUS NITRATE, DISS. i DET. (MG/L AS N)	1	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
00650	PHOSPHATE, TOTAL (MG/L AS PO4)	2	1.39	1.39	2.3	0.48	1.656	1.287	**	**	**	**
00660	PHOSPHATE, ORTHO (MG/L AS PO4)	13	1.9	1.894	3.9	0.03	1.978	1.406	0.118	0.53	3.25	3.86
00665	PHOSPHORUS, TOTAL (MG/L AS P)	12	0.762	0.797	1.513	0.269	0.204	0.452	0.287	0.352	1.208	1.5
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	13	0.625	0.618	1.281	0.01	0.211	0.459	0.038	0.172	1.058	1.265
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	12	4.5	5.142	9.5	3.2	3.484	1.867	3.29	4.	5.925	8.99
00900	HARDNESS, TOTAL (MG/L AS CaCO3)	4	76.	72.25	79.	58.	92.917	9.639	**	**	**	**
00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	4	21.5	20.5	30.	9.	103.	10.149	**	**	**	**
00915	CALCIUM, DISSOLVED (MG/L AS Ca)	4	20.5	19.75	22.	16.	8.25	2.872	**	**	**	**
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	4	5.7	5.65	6.7	4.5	0.917	0.957	**	**	**	**
00930	SODIUM, DISSOLVED (MG/L AS NA)	4	9.4	9.475	13.	6.1	9.649	3.106	**	**	**	**
00931	SODIUM ADSORPTION RATIO	3	0.5	0.467	0.6	0.3	0.023	0.153	**	**	**	**
00932	SODIUM, PERCENT	3	23.	22.333	26.	18.	16.333	4.041	**	**	**	**
00933	SODIUM,PLUS POTASSIUM (MG/L)	1	8.8	8.8	8.8	8.8	0.	0.	**	**	**	**
00935	POTASSIUM, DISSOLVED (MG/L AS K)	4	2.15	2.4	3.9	1.4	1.327	1.152	**	**	**	**
00940	CHLORIDE,TOTAL IN WATER MG/L	4	10.5	10.75	16.	6.	24.917	4.992	**	**	**	**
00945	SULFATE, TOTAL (MG/L AS SO4)	4	24.5	23.5	31.	14.	77.667	8.813	**	**	**	**
00950	FLUORIDE, DISSOLVED (MG/L AS F)	4	0.1	0.125	0.2	0.1	0.003	0.05	**	**	**	**
00955	SILICA, DISSOLVED (MG/L AS SiO2)	4	9.6	9.45	13.	5.6	12.997	3.605	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

# Parameter Inventory for Station: MANA0005

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	08/30/79-08/30/79	1	1.	1.	1.	1.	0.	0.	**	**	**	**
01025	CADMIUM, DISSOLVED (UG/L AS CD)	08/30/79-08/30/79	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
01030	CHROMIUM, DISSOLVED (UG/L AS CR)	08/30/79-08/30/79	1 ##	10.	10.	10.	10.	0.	0.	**	**	**	**
01040	COPPER, DISSOLVED (UG/L AS CU)	08/30/79-08/30/79	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
01046	IRON, DISSOLVED (UG/L AS FE)	03/06/68-08/30/79	3	60.	100.	240.	0.	15600.	124.9	**	**	**	**
01049	LEAD, DISSOLVED (UG/L AS PB)	08/30/79-08/30/79	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
01056	MANGANESE, DISSOLVED (UG/L AS MN)	08/30/79-08/30/79	1	40.	40.	40.	40.	0.	0.	**	**	**	**
01090	ZINC, DISSOLVED (UG/L AS ZN)	08/30/79-08/30/79	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
01145	SELENIUM, DISSOLVED (UG/L AS SE)	08/30/79-08/30/79	1 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
34790	SURFACTANTS, AS CTAS, WATER MG/L	08/17/92-08/17/92	1	7.	7.	7.	7.	0.	0.	**	**	**	**
34795	ANTIMONY, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	1.	1.	1.	1.	0.	0.	**	**	**	**
34800	ARSENIC, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
34810	BERYLLIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	2.	2.	2.	2.	0.	0.	**	**	**	**
34816	BISMUTH, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
34825	CADMIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
34830	CALCIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
34835	CERIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	85.	85.	85.	85.	0.	0.	**	**	**	**
34840	COBALT, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	73.	73.	73.	73.	0.	0.	**	**	**	**
34845	CHROMIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	27.	27.	27.	27.	0.	0.	**	**	**	**
34850	COPPER, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	38.	38.	38.	38.	0.	0.	**	**	**	**
34855	EUROPIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	43.	43.	43.	43.	0.	0.	**	**	**	**
34860	GALLIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	20.	20.	20.	20.	0.	0.	**	**	**	**
34870	GOLD, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1 ##	4.	4.	4.	4.	0.	0.	**	**	**	**
34875	HOLMIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1 ##	2.	2.	2.	2.	0.	0.	**	**	**	**
34880	IRON, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	5.	5.	5.	5.	0.	0.	**	**	**	**
34885	LANTHANUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	43.	43.	43.	43.	0.	0.	**	**	**	**
34890	LEAD, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	27.	27.	27.	27.	0.	0.	**	**	**	**
34895	LITHIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	50.	50.	50.	50.	0.	0.	**	**	**	**
34900	MAGNESIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	1.	1.	1.	1.	0.	0.	**	**	**	**
34905	MANGANESE, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	1400.	1400.	1400.	1400.	0.	0.	**	**	**	**
34910	MERCURY, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	0.06	0.06	0.06	0.06	0.	0.	**	**	**	**
34915	MOLYBDENUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1 ##	1.	1.	1.	1.	0.	0.	**	**	**	**
34920	NEODYMIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	32.	32.	32.	32.	0.	0.	**	**	**	**
34925	NICKEL, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	36.	36.	36.	36.	0.	0.	**	**	**	**
34930	NIObIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	6.	6.	6.	6.	0.	0.	**	**	**	**
34935	PHOSPHORUS, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	0.08	0.08	0.08	0.08	0.	0.	**	**	**	**
34940	POTASSIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	2.	2.	2.	2.	0.	0.	**	**	**	**
34945	SCANDIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	16.	16.	16.	16.	0.	0.	**	**	**	**
34950	SELENIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	0.4	0.4	0.4	0.4	0.	0.	**	**	**	**
34955	SILVER, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	0.2	0.2	0.2	0.2	0.	0.	**	**	**	**
34960	SODIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	1.	1.	1.	1.	0.	0.	**	**	**	**
34965	STRONTIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	83.	83.	83.	83.	0.	0.	**	**	**	**
34970	SULFUR, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	0.08	0.08	0.08	0.08	0.	0.	**	**	**	**
34975	TANTALUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1 ##	20.	20.	20.	20.	0.	0.	**	**	**	**
34980	THORIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	13.	13.	13.	13.	0.	0.	**	**	**	**
34985	TIN, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
35000	URANIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	4.6	4.6	4.6	4.6	0.	0.	**	**	**	**
35005	VANADIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	140.	140.	140.	140.	0.	0.	**	**	**	**
35010	YTTRIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	24.	24.	24.	24.	0.	0.	**	**	**	**
35015	YTTERBIUM, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	2.	2.	2.	2.	0.	0.	**	**	**	**
35020	ZINC, BEDLOAD SED, WET SIEVE DIAM	08/17/92-08/17/92	1	130.	130.	130.	130.	0.	0.	**	**	**	**
70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C), MG/L	11/19/52-08/30/79	4	125.	124.25	140.	107.	192.917	13.889	**	**	**	**
70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	03/06/68-08/30/79	3	125.	117.	135.	91.	532.	23.065	**	**	**	**
70302	SOLIDS, DISSOLVED-TONS PER DAY	03/06/68-04/07/69	2	23.	23.	26.1	19.9	19.22	4.384	**	**	**	**
70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	03/06/68-08/30/79	3	0.18	0.173	0.19	0.15	0.	0.021	**	**	**	**
71846	NITROGEN, AMMONIA, DISSOLVED (MG/L AS NH4)	06/17/74-08/27/74	11	0.98	0.999	2.6	0.3	0.413	0.643	0.336	0.52	1.1	2.4
71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	11/19/52-08/30/79	16	6.75	7.681	16.	0.5	25.847	5.084	0.99	2.85	12.	16.
71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	06/17/74-08/30/79	13	1.2	1.499	6.7	0.03	3.174	1.782	0.046	0.375	1.65	5.3
71885	IRON (UG/L AS FE)	11/19/52-11/19/52	1	40.	40.	40.	40.	0.	0.	**	**	**	**
71890	MERCURY, DISSOLVED (UG/L AS HG)	08/30/79-08/30/79	1	0.9	0.9	0.9	0.9	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0005

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	2	0	0.00							2	0	0.00			
00400 PH	Other-Hi Lim.	9.	5	0	0.00	2	0	0.00	1	0	0.00	2	0	0.00			
	Other-Lo Lim.	6.5	5	1	0.20	2	0	0.00	1	0	0.00	2	1	0.50			
00613 NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	13	1	0.08				4	0	0.00	9	1	0.11			
00618 NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	13	0	0.00				4	0	0.00	9	0	0.00			
00631 NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	1	0	0.00							1	0	0.00			
00940 CHLORIDE, TOTAL IN WATER	Fresh Acute	860.	4	0	0.00	2	0	0.00	1	0	0.00	1	0	0.00			
	Drinking Water	250.	4	0	0.00	2	0	0.00	1	0	0.00	1	0	0.00			
00945 SULFATE, TOTAL (AS SO4)	Drinking Water	250.	4	0	0.00	2	0	0.00	1	0	0.00	1	0	0.00			
00950 FLUORIDE, DISSOLVED AS F	Drinking Water	4.	4	0	0.00	2	0	0.00	1	0	0.00	1	0	0.00			
01000 ARSENIC, DISSOLVED	Fresh Acute	360.	1	0	0.00							1	0	0.00			
	Drinking Water	50.	1	0	0.00							1	0	0.00			
01025 CADMIUM, DISSOLVED	Fresh Acute	3.9	1	0	0.00							1	0	0.00			
	Drinking Water	5.	1	0	0.00							1	0	0.00			
01030 CHROMIUM, DISSOLVED	Drinking Water	100.	1	0	0.00							1	0	0.00			
01040 COPPER, DISSOLVED	Fresh Acute	18.	1	0	0.00							1	0	0.00			
	Drinking Water	1300.	1	0	0.00							1	0	0.00			
01049 LEAD, DISSOLVED	Fresh Acute	82.	1	0	0.00							1	0	0.00			
	Drinking Water	15.	1	0	0.00							1	0	0.00			
01090 ZINC, DISSOLVED	Fresh Acute	120.	1	0	0.00							1	0	0.00			
	Drinking Water	5000.	1	0	0.00							1	0	0.00			
01145 SELENIUM, DISSOLVED	Fresh Acute	20.	1	0	0.00							1	0	0.00			
	Drinking Water	50.	1	0	0.00							1	0	0.00			
71851 NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	16	0	0.00	2	0	0.00	5	0	0.00	9	0	0.00			
71856 NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	13	1	0.08				4	0	0.00	9	1	0.11			
71890 MERCURY, DISSOLVED	Fresh Acute	2.4	1	0	0.00							1	0	0.00			
	Drinking Water	2.	1	0	0.00							1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter



### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0005

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
71851p NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	11/19/52-08/30/79	2	0.85	0.85	1.2	0.5	0.245	0.495	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0005

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
71851p NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	11/19/52-08/30/79	5	5.4	5.02	7.	2.6	3.532	1.879	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

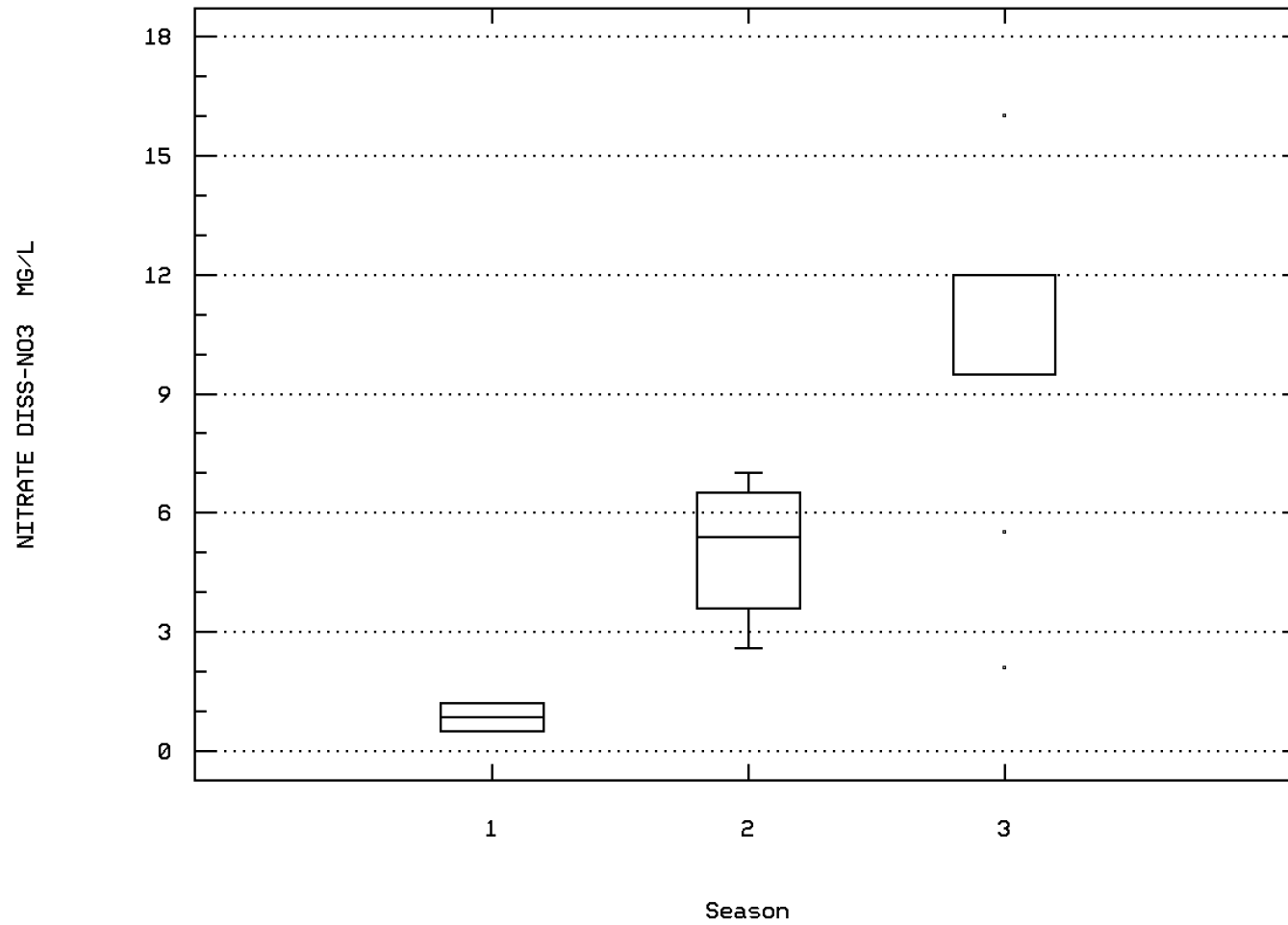
### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0005

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
71851p NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	11/19/52-08/30/79	9	12.	10.678	16.	2.1	20.472	4.525	2.1	7.5	14.	16.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0005 Parameter Code: 71851

NITRATE NITROGEN, DISSOLVED (MG/L AS NO



BULL RUN NEAR MANASSAS, VA

## Station Inventory for Station: MANA0006

NPS Station ID: MANA0006      LAT/LON: 38.797226/ -77.458059

Location: GAGING STAT.ON OLD CENTERVILLE RD.

Station Type: /TYPA/AMBNT/STREAM

RMI-Indexes:

RMI-Miles:

HUC: 02070010

Major Basin: 02-NORTH-ATLANTIC

Minor Basin: 1-POTOMAC-SHENANDOAH

RF1 Index: 02070010052

RF3 Index: 02070010004706.08

Description:

VIRGINIA STATE WATER CONTROL BOARD

RIVER: BULL RUN

AMBIENT MONITORING

SECTION: 07A

BASIN: 1A POTOMAC

TOPO MAP #: 0028 TOPO MAP NAME: MANASSAS, VA

Agency: 21VASWCB

FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM

STORET Station ID(s): 1ABUL011.03 /VA1A07AX0019/VA1A3X0019

Within Park Boundary: No

Date Created: / /

Depth of Water: 0

Elevation: 0

RF1 Mile Point: 5.480

RF3 Mile Point: 7.72

Aquifer:

Water Body Id:

ECO Region:

Distance from RF1: 0.00

Distance from RF3: 0.03

On/Off RF1: OFF

On/Off RF3:

REGION: 3 NORTHERN VIRGINIA

### Parameter Inventory for Station: MANA0006

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	07/21/71-05/09/79	71	20.	16.539	29.4	0.	74.516	8.632	2.98	8.9	24.	25.
00077 TRANSPARENCY, SECCHI DISC (INCHES)	05/01/75-05/01/75	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	07/21/71-05/09/79	70	8.2	8.473	13.6	2.4	7.446	2.729	5.02	6.475	10.6	12.4
00310 BOD, 5 DAY, 20 DEG C MG/L	07/21/71-05/09/79	44	3.	3.466	9.	1.	4.265	2.065	1.	2.	4.	7.
00340 COD, .25N K2CR2O7 MG/L	01/08/75-06/10/76	2	19.5	19.5	31.	8.	264.5	16.263	**	**	**	**
00400 PH (STANDARD UNITS)	07/21/71-05/09/79	72	7.5	7.463	8.8	6.7	0.187	0.432	7.	7.2	7.7	8.
00400 CONVERTED PH (STANDARD UNITS)	07/21/71-05/09/79	72	7.5	7.291	8.8	6.7	0.217	0.465	7.	7.2	7.7	8.
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	07/21/71-05/09/79	72	0.032	0.051	0.2	0.002	0.002	0.046	0.01	0.02	0.063	0.1
00403 PH, LAB, STANDARD UNITS SU	07/05/74-01/08/75	2	7.35	7.35	7.4	7.3	0.005	0.071	**	**	**	**
00403 CONVERTED PH, LAB, STANDARD UNITS	07/05/74-01/08/75	2	7.347	7.347	7.4	7.3	0.005	0.071	**	**	**	**
00403 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	07/05/74-01/08/75	2	0.045	0.045	0.05	0.04	0.	0.007	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	07/05/74-01/08/75	2	30.5	30.5	56.	5.	1300.5	36.062	**	**	**	**
00500 RESIDUE, TOTAL (MG/L)	01/08/75-06/10/76	7	206.	209.286	302.	129.	4620.571	67.975	**	**	**	**
00505 RESIDUE, TOTAL VOLATILE (MG/L)	01/08/75-06/10/76	7	78.	74.429	136.	30.	1161.286	34.078	**	**	**	**
00510 RESIDUE, TOTAL FIXED (MG/L)	01/08/75-06/10/76	7	119.	134.857	240.	56.	3875.81	62.256	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/08/75-05/09/79	40	7.	16.975	150.	0.5	866.256	29.432	0.65	4.	13.5	50.8
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-05/09/79	39	2.	4.897	52.	0.	90.805	9.529	0.	1.	4.	10.
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	01/08/75-05/09/79	40	4.	12.113	116.	0.	524.891	22.91	0.	0.625	11.	41.2
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	08/05/71-05/09/79	62	0.6	0.93	6.	0.05	1.223	1.106	0.05	0.2	1.124	2.369
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	08/05/71-05/09/79	62	0.1	0.166	2.	0.005	0.092	0.303	0.005	0.03	0.21	0.297
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	08/05/71-07/28/76	40	1.059	1.161	3.199	0.005	0.535	0.731	0.416	0.6	1.614	2.213
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	08/05/71-05/09/79	62	1.	1.437	6.	0.2	1.466	1.211	0.4	0.7	1.724	3.069
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	10/20/76-05/09/79	22	1.1	1.423	7.	0.005	2.026	1.423	0.057	0.775	1.675	2.47
00665 PHOSPHORUS, TOTAL (MG/L AS P)	01/08/75-06/10/76	2	0.35	0.35	0.4	0.3	0.005	0.071	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/08/75-06/10/76	2	0.32	0.32	0.44	0.2	0.029	0.17	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	01/08/75-05/09/79	39	8.	8.974	19.	5.	9.552	3.091	6.	7.	11.	13.
00935 POTASSIUM, DISSOLVED (MG/L AS K)	03/27/79-03/27/79	1	1.59	1.59	1.59	1.59	0.	0.	**	**	**	**
00940 CHLORIDE, TOTAL IN WATER MG/L	01/08/75-06/10/76	2	30.	30.	39.	21.	162.	12.728	**	**	**	**
01002 ARSENIC, TOTAL (UG/L AS AS)	08/05/71-03/27/79	9 ##	1.	1.889	6.	0.5	2.861	1.691	0.5	1.	2.5	6.
01027 CADMIUM, TOTAL (UG/L AS CD)	08/05/71-03/27/79	12 ##	5.	7.833	20.	5.	27.424	5.237	5.	5.	9.25	19.1
01034 CHROMIUM, TOTAL (UG/L AS CR)	08/05/71-03/27/79	14 ##	5.	5.714	10.	5.	3.297	1.816	5.	5.	5.	10.
01042 COPPER, TOTAL (UG/L AS CU)	08/05/71-03/27/79	14 ##	5.	8.929	30.	5.	54.533	7.385	5.	5.	10.	25.
01045 IRON, TOTAL (UG/L AS FE)	11/08/78-03/27/79	2	230.	230.	360.	100.	33800.	183.848	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0006

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
01051 LEAD, TOTAL (UG/L AS PB)	08/05/71-03/27/79	13	10.	14.423	60.	1.	288.827	16.995	1.2	5.	15.	52.
01055 MANGANESE, TOTAL (UG/L AS MN)	11/08/78-03/27/79	2	35.	35.	40.	30.	50.	7.071	**	**	**	**
01065 NICKEL, DISSOLVED (UG/L AS NI)	05/11/73-03/27/79	9 ##	50.	40.	50.	5.	393.75	19.843	5.	27.5	50.	50.
01092 ZINC, TOTAL (UG/L AS ZN)	08/05/71-03/27/79	14 ##	7.5	53.214	450.	5.	14033.104	118.461	5.	5.	40.	285.
31505 COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	06/30/77-02/03/78	2	2195.	2195.	4300.	90.	8862050.	2976.92	**	**	**	**
31505 LOG COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	06/30/77-02/03/78	2	2.794	2.794	3.633	1.954	1.41	1.187	**	**	**	**
31505 GM COLIFORM,TOT,MPN,CONFIRMED TEST, TUBE CONFIG.	06/10/76-06/10/76	1	9300.	9300.	9300.	9300.	0.	0.	**	**	**	**
31506 LOG COLIFORM,TOT,MPN, CONFIRMED TEST, TUBE CONFIG.	06/10/76-06/10/76	1	3.968	3.968	3.968	3.968	0.	0.	**	**	**	**
31506 GM COLIFORM,TOT,MPN, CONFIRMED TEST, TUBE CONFIG.	07/21/71-05/09/79	69	100.	641.594	6000.	40.	1797619.48	1340.753	50.	50.	415.	1900.
31616 FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	07/21/71-05/09/79	69	2.	2.235	3.778	1.602	0.416	0.645	1.699	1.699	2.618	3.279
31616 LOG FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	07/21/71-05/09/79	69	2.	2.235	3.778	1.602	0.416	0.645	1.699	1.699	2.618	3.279
50060 GM FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/15/75-06/30/78	5	0.	0.06	0.3	0.	0.018	0.134	**	**	**	**
70505 PHOSPHATE,TOTAL,COLORIMETRIC METHOD (MG/L AS P)	08/05/71-05/09/79	60	0.2	0.554	4.4	0.05	0.725	0.851	0.05	0.1	0.5	1.98
70507 PHOSPHORUS,IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	08/05/71-05/09/79	59	0.2	0.52	4.399	0.005	0.68	0.825	0.02	0.1	0.5	1.699
71900 MERCURY, TOTAL (UG/L AS HG)	08/05/71-03/27/79	14 ##	0.25	0.3	0.7	0.15	0.03	0.173	0.15	0.25	0.25	0.7

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0006

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
			Obs			Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	70	6	0.09	23	0	0.00	26	1	0.04	21	5	0.24			
00400 PH	Other-Hi Lim.	9.	72	0	0.00	24	0	0.00	27	0	0.00	21	0	0.00			
	Other-Lo Lim.	6.5	72	0	0.00	24	0	0.00	27	0	0.00	21	0	0.00			
00403 PH, LAB	Other-Hi Lim.	9.	2	0	0.00	1	0	0.00	1	0	0.00						
	Other-Lo Lim.	6.5	2	0	0.00	1	0	0.00	1	0	0.00						
00615 NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	62	2	0.03	21	1	0.05	23	1	0.04	18	0	0.00			
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	40	0	0.00	11	0	0.00	14	0	0.00	15	0	0.00			
00630 NITRITE PLUS NITRATE, TOTAL I DET.	Drinking Water	10.	22	0	0.00	10	0	0.00	9	0	0.00	3	0	0.00			
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	2	0	0.00	1	0	0.00	1	0	0.00						
	Drinking Water	250.	2	0	0.00	1	0	0.00	1	0	0.00						
01002 ARSENIC, TOTAL	Fresh Acute	360.	9	0	0.00	2	0	0.00	3	0	0.00	4	0	0.00			
	Drinking Water	50.	9	0	0.00	2	0	0.00	3	0	0.00	4	0	0.00			
01027 CADMIUM, TOTAL	Fresh Acute	3.9	3 &	3	1.00				1	1	1.00	2	2	1.00			
	Drinking Water	5.	3 &	3	1.00				1	1	1.00	2	2	1.00			
01034 CHROMIUM, TOTAL	Drinking Water	100.	14	0	0.00	2	0	0.00	6	0	0.00	6	0	0.00			
01042 COPPER, TOTAL	Fresh Acute	18.	14	2	0.14	2	0	0.00	6	0	0.00	6	2	0.33			
	Drinking Water	1300.	14	0	0.00	2	0	0.00	6	0	0.00	6	0	0.00			
01051 LEAD, TOTAL	Fresh Acute	82.	13	0	0.00	2	0	0.00	5	0	0.00	6	0	0.00			
	Drinking Water	15.	13	3	0.23	2	0	0.00	5	0	0.00	6	3	0.50			
01065 NICKEL, DISSOLVED	Fresh Acute	1400.	9	0	0.00	2	0	0.00	4	0	0.00	3	0	0.00			
	Drinking Water	100.	9	0	0.00	2	0	0.00	4	0	0.00	3	0	0.00			
01092 ZINC, TOTAL	Fresh Acute	120.	14	2	0.14	2	0	0.00	6	0	0.00	6	2	0.33			
	Drinking Water	5000.	14	0	0.00	2	0	0.00	6	0	0.00	6	0	0.00			
31505 COLIFORM, TOTAL, MPN, CONF. TEST, 35C	Other-Hi Lim.	1000.	2	1	0.50	1	0	0.00	1	1	1.00						
31506 COLIFORM, TOTAL, MPN, CONF. TEST, TUBE C	Other-Hi Lim.	1000.	1	1	1.00				1	1	1.00						
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	69	28	0.41	22	6	0.27	27	12	0.44	20	10	0.50			
50060 CHLORINE, TOTAL RESIDUAL	Fresh Acute	0.019	5	1	0.20	3	0	0.00	1	1	1.00	1	0	0.00			
71900 MERCURY, TOTAL	Fresh Acute	2.4	14	0	0.00	2	0	0.00	6	0	0.00	6	0	0.00			
	Drinking Water	2.	14	0	0.00	2	0	0.00	6	0	0.00	6	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### Annual Analysis for 1971 - Station MANA0006

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	07/21/71-05/09/79	5	23.3	21.98	24.4	15.	15.437	3.929	**	**	**	**
00300	OXYGEN, DISSOLVED MG/L	07/21/71-05/09/79	5	6.8	6.76	9.4	4.	3.728	1.931	**	**	**	**
00400	PH (STANDARD UNITS)	07/21/71-05/09/79	5	7.3	7.46	8.8	6.7	0.773	0.879	**	**	**	**
00400	CONVERTED PH (STANDARD UNITS)	07/21/71-05/09/79	5	7.3	7.03	8.8	6.7	1.004	1.002	**	**	**	**
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	07/21/71-05/09/79	5	0.05	0.093	0.2	0.002	0.01	0.099	**	**	**	**
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	5	300.	710.	1800.	50.	628000.	792.465	**	**	**	**
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	5	2.477	2.509	3.255	1.699	0.46	0.678	**	**	**	**
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			322.895								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1972 - Station MANA0006

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	07/21/71-05/09/79	8	23.05	23.238	29.4	18.3	10.128	3.183	**	**	**	**
00300	OXYGEN, DISSOLVED MG/L	07/21/71-05/09/79	8	5.6	5.413	8.2	2.4	3.601	1.898	**	**	**	**
00400	PH (STANDARD UNITS)	07/21/71-05/09/79	8	7.3	7.238	7.5	6.8	0.074	0.272	**	**	**	**
00400	CONVERTED PH (STANDARD UNITS)	07/21/71-05/09/79	8	7.3	7.16	7.5	6.8	0.081	0.285	**	**	**	**
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	07/21/71-05/09/79	8	0.05	0.069	0.158	0.032	0.002	0.046	**	**	**	**
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	7	800.	1292.857	6000.	50.	4473690.476	2115.11	**	**	**	**
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	7	2.903	2.661	3.778	1.699	0.5	0.707	**	**	**	**
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =											
				457.95									

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1973 - Station MANA0006

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	07/21/71-05/09/79	5	24.4	23.54	27.2	20.	7.698	2.775	**	**	**	**
00300	OXYGEN, DISSOLVED MG/L	07/21/71-05/09/79	5	6.	5.36	8.2	3.	4.388	2.095	**	**	**	**
00400	PH (STANDARD UNITS)	07/21/71-05/09/79	5	7.	7.08	7.6	6.7	0.117	0.342	**	**	**	**
00400	CONVERTED PH (STANDARD UNITS)	07/21/71-05/09/79	5	7.	6.988	7.6	6.7	0.128	0.357	**	**	**	**
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	07/21/71-05/09/79	5	0.1	0.103	0.2	0.025	0.004	0.066	**	**	**	**
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	6	100.	1133.333	6000.	50.	5713666.667	2390.328	**	**	**	**
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	6	2.	2.313	3.778	1.699	0.649	0.806	**	**	**	**
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			205.357								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1974 - Station MANA0006

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	07/21/71-05/09/79	9	20.	17.589	25.	4.4	57.141	7.559	4.4	10.55	23.9	25.
00300	OXYGEN, DISSOLVED MG/L	07/21/71-05/09/79	9	7.7	7.867	11.2	5.7	3.81	1.952	5.7	6.15	9.5	11.2
00400	PH (STANDARD UNITS)	07/21/71-05/09/79	9	7.3	7.3	7.6	7.	0.045	0.212	7.	7.1	7.5	7.6
00400	CONVERTED PH (STANDARD UNITS)	07/21/71-05/09/79	9	7.3	7.254	7.6	7.	0.047	0.218	7.	7.1	7.5	7.6
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	07/21/71-05/09/79	9	0.05	0.056	0.1	0.025	0.001	0.028	0.025	0.032	0.082	0.1
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	9	100.	805.556	6000.	50.	3814652.778	1953.114	50.	50.	400.	6000.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	9	2.	2.231	3.778	1.699	0.46	0.678	1.699	1.699	2.602	3.778
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			170.224								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1975 - Station MANA0006

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	07/21/71-05/09/79	13	10.	12.169	25.6	2.8	62.807	7.925	3.16	5.25	20.	24.48
00300	OXYGEN, DISSOLVED MG/L	07/21/71-05/09/79	12	10.3	9.908	13.	5.2	6.361	2.522	5.86	7.6	12.45	13.
00400	PH (STANDARD UNITS)	07/21/71-05/09/79	13	7.5	7.454	8.	7.	0.151	0.389	7.	7.	7.85	8.
00400	CONVERTED PH (STANDARD UNITS)	07/21/71-05/09/79	13	7.5	7.311	8.	7.	0.173	0.416	7.	7.	7.85	8.
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	07/21/71-05/09/79	13	0.032	0.049	0.1	0.01	0.001	0.037	0.01	0.015	0.1	0.1
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	12 ##	75.	450.	2600.	50.	650454.545	806.508	50.	50.	350.	2300.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	12 ##	1.849	2.168	3.415	1.699	0.382	0.618	1.699	1.699	2.527	3.352
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =											
					147.26								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1976 - Station MANA0006

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	07/21/71-05/09/79	12	14.15	13.575	24.4	0.	83.342	9.129	0.18	5.15	22.075	24.28
00300	OXYGEN, DISSOLVED MG/L	07/21/71-05/09/79	12	10.3	9.575	12.5	6.5	5.693	2.386	6.53	6.95	11.9	12.41
00400	PH (STANDARD UNITS)	07/21/71-05/09/79	12	7.55	7.633	8.7	7.	0.157	0.396	7.12	7.5	7.775	8.43
00400	CONVERTED PH (STANDARD UNITS)	07/21/71-05/09/79	12	7.547	7.511	8.7	7.	0.173	0.416	7.12	7.5	7.775	8.43
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	07/21/71-05/09/79	12	0.028	0.031	0.1	0.002	0.001	0.024	0.006	0.017	0.032	0.082
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	11 ##	50.	495.455	3700.	50.	1177727.273	1085.231	50.	50.	400.	3110.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	11 ##	1.699	2.14	3.568	1.699	0.401	0.633	1.699	1.699	2.602	3.43
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			138.043								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1977 - Station MANA0006

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	07/21/71-05/09/79	9	17.	16.611	29.	2.	78.924	8.884	2.	9.5	24.75	29.
00300	OXYGEN, DISSOLVED MG/L	07/21/71-05/09/79	9	9.4	9.178	12.8	6.	4.102	2.025	6.	7.6	10.5	12.8
00400	PH (STANDARD UNITS)	07/21/71-05/09/79	10	7.5	7.63	8.6	7.2	0.169	0.411	7.21	7.375	7.775	8.54
00400	CONVERTED PH (STANDARD UNITS)	07/21/71-05/09/79	10	7.5	7.511	8.6	7.2	0.185	0.43	7.21	7.375	7.775	8.54
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	07/21/71-05/09/79	10	0.032	0.031	0.063	0.003	0.	0.018	0.003	0.017	0.042	0.062
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	10 ##	75.	418.	2400.	50.	544462.222	737.877	50.	50.	522.5	2240.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	10 ##	1.849	2.171	3.38	1.699	0.375	0.612	1.699	1.699	2.701	3.332
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			148.342								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1978 - Station MANA0006

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	07/21/71-05/09/79	7	12.	14.129	26.	0.1	119.889	10.949	**	**	**	**
00300	OXYGEN, DISSOLVED MG/L	07/21/71-05/09/79	7	10.	9.843	13.6	6.3	6.34	2.518	**	**	**	**
00400	PH (STANDARD UNITS)	07/21/71-05/09/79	7	7.7	7.714	8.4	7.3	0.125	0.353	**	**	**	**
00400	CONVERTED PH (STANDARD UNITS)	07/21/71-05/09/79	7	7.7	7.616	8.4	7.3	0.136	0.369	**	**	**	**
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	07/21/71-05/09/79	7	0.02	0.024	0.05	0.004	0.	0.016	**	**	**	**
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	6 ##	50.	365.	1900.	40.	565950.	752.296	**	**	**	**
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	6 ##	1.699	1.996	3.279	1.602	0.413	0.643	**	**	**	**
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			99.149								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1979 - Station MANA0006

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	07/21/71-05/09/79	3	8.	11.	25.	0.	163.	12.767	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	07/21/71-05/09/79	3	11.2	11.033	12.4	9.5	2.123	1.457	**	**	**	**
00400 PH (STANDARD UNITS)	07/21/71-05/09/79	3	7.1	7.4	8.	7.1	0.27	0.52	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	07/21/71-05/09/79	3	7.1	7.25	8.	7.1	0.304	0.551	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	07/21/71-05/09/79	3	0.079	0.056	0.079	0.01	0.002	0.04	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	3 ##	50.	133.333	300.	50.	20833.333	144.338	**	**	**	**
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	07/21/71-05/09/79	3 ##	1.699	1.958	2.477	1.699	0.202	0.449	**	**	**	**
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			90.856								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0006

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	23	6.1	6.174	15.	0.	22.227	4.715	0.04	2.	10.	13.44
00300	OXYGEN, DISSOLVED MG/L	23	11.6	11.235	13.6	6.8	2.769	1.664	8.72	10.2	12.5	13.
00310	BOD, 5 DAY, 20 DEG C MG/L	17	3.	3.235	9.	1.	4.316	2.078	1.	2.	3.5	7.4
00400	PH (STANDARD UNITS)	24	7.5	7.421	8.	6.7	0.128	0.358	7.	7.025	7.7	7.9
00400	CONVERTED PH (STANDARD UNITS)	24	7.5	7.28	8.	6.7	0.148	0.385	7.	7.025	7.7	7.9
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	24	0.032	0.052	0.2	0.01	0.002	0.045	0.013	0.02	0.095	0.1
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	21	0.7	0.89	4.199	0.05	0.977	0.988	0.08	0.25	0.95	2.619
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	21	0.05	0.13	1.4	0.005	0.089	0.299	0.005	0.02	0.095	0.268
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	21	0.9	1.185	4.699	0.3	1.095	1.046	0.32	0.55	1.4	2.979
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	22 ##	50.	338.182	3700.	40.	677644.156	823.191	50.	50.	225.	1240.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	22 ##	1.699	2.006	3.568	1.602	0.304	0.551	1.699	1.699	2.345	3.024
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C			101.5								
70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	20	0.2	0.213	0.8	0.05	0.034	0.185	0.05	0.063	0.275	0.49
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	20	0.145	0.172	0.7	0.005	0.029	0.17	0.009	0.05	0.2	0.48

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0006

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	27	21.7	20.241	29.	7.2	30.526	5.525	10.8	17.2	24.	26.24
00300	OXYGEN, DISSOLVED MG/L	26	7.6	7.669	11.2	3.6	3.698	1.923	5.14	6.225	8.75	10.66
00310	BOD, 5 DAY, 20 DEG C MG/L	17	3.	3.765	9.	1.	4.566	2.137	1.8	2.	5.	7.4
00400	PH (STANDARD UNITS)	27	7.4	7.448	8.7	6.7	0.21	0.459	6.96	7.1	7.7	8.08
00400	CONVERTED PH (STANDARD UNITS)	27	7.4	7.267	8.7	6.7	0.244	0.494	6.96	7.1	7.7	8.08
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	27	0.04	0.054	0.2	0.002	0.002	0.047	0.009	0.02	0.079	0.112
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	23	0.5	0.664	2.299	0.05	0.382	0.618	0.05	0.2	1.	1.78
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	23	0.12	0.215	2.	0.005	0.162	0.402	0.005	0.03	0.23	0.346
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	23	1.	1.2	2.6	0.3	0.441	0.664	0.52	0.7	1.599	2.559
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	27	100.	640.	6000.	50.	1650700.	1284.796	50.	50.	430.	2440.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	27	2.	2.29	3.778	1.699	0.385	0.62	1.699	1.699	2.633	3.387
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C			195.113								
70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	22	0.2	0.361	1.8	0.05	0.179	0.423	0.05	0.088	0.5	1.02
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	22	0.19	0.309	1.699	0.005	0.148	0.385	0.01	0.1	0.363	0.862

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0006

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	21	23.9	23.133	29.4	16.1	8.963	2.994	18.44	21.4	24.4	26.72
00300	OXYGEN, DISSOLVED MG/L	21	6.6	6.443	9.4	2.4	4.082	2.02	3.2	5.	7.95	9.38
00310	BOD, 5 DAY, 20 DEG C MG/L	10	3.	3.35	8.2	1.	4.301	2.074	1.	1.75	4.125	7.83
00400	PH (STANDARD UNITS)	21	7.5	7.529	8.8	6.7	0.235	0.485	6.92	7.3	7.65	8.48
00400	CONVERTED PH (STANDARD UNITS)	21	7.5	7.335	8.8	6.7	0.274	0.524	6.92	7.3	7.65	8.48
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	21	0.032	0.046	0.2	0.002	0.002	0.046	0.004	0.023	0.05	0.121
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	18	0.74	1.317	6.	0.05	2.488	1.577	0.05	0.22	1.889	3.839
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	18	0.17	0.146	0.31	0.005	0.01	0.099	0.005	0.058	0.233	0.301
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	18	1.699	2.033	6.	0.2	2.873	1.695	0.29	0.55	3.025	5.189
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	20	150.	977.5	6000.	50.	3200388.158	1788.963	50.	50.	1025.	5580.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	20	2.151	2.413	3.778	1.699	0.527	0.726	1.699	1.699	3.007	3.726
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C			259.058								
70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	18	0.5	1.169	4.4	0.05	1.669	1.292	0.05	0.1	2.125	3.14
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	17	0.7	1.202	4.399	0.01	1.528	1.236	0.018	0.265	2.049	3.28

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot



## Station Inventory for Station: MANA0007

NPS Station ID: MANA0007  
Location: RT. 29/211 BRIDGE  
Station Type: /TYPA/AMBNT/STREAM  
RMI-Indexes:

LAT/LON: 38.833059/ -77.463615

Agency: 21VASWCB  
FIPS State/County: 51059 VIRGINIA/FAIRFAX  
STORET Station ID(s): 1ACUB003.74 /VA1A07AX0032/VA1A3X0032  
Within Park Boundary: No

Date Created: / /

RMI-Miles:  
HUC: 02070010  
Major Basin: 02-NORTH-ATLANTIC  
Minor Basin: 1-POTOMAC-SHENANDOAH  
RF1 Index: 02070010053  
RF3 Index: 02070010008300.00

Depth of Water: 0  
Elevation: 0

RF1 Mile Point: 3.570  
RF3 Mile Point: 0.35

Aquifer:  
Water Body Id:  
ECO Region:  
Distance from RF1: 0.00  
Distance from RF3: 0.04

On/Off RF1: OFF  
On/Off RF3:

Description:  
VIRGINIA STATE WATER CONTROL BOARD  
RIVER: CUB RUN

AMBIENT MONITORING

BASIN: 1A POTOMAC

REGION: 3 NORTHERN

SECTION: 07A

TOPO MAP #: 0028

TOPO MAP NAME: MANASSAS, VA

### Parameter Inventory for Station: MANA0007

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	75	12.6	13.313	26.1	0.	68.37	8.269	1.8	6.1	21.1	24.76
00070 TURBIDITY, (JACKSON CANDLE UNITS)	09/25/90-04/07/92	7	5.3	18.029	74.	2.8	663.242	25.753	**	**	**	**
00076 TURBIDITY,HACH TURBIDIMETER (FORMAZIN TURB UNIT)	08/24/94-07/15/96	8	8.35	13.2	38.	4.6	124.934	11.177	**	**	**	**
00077 TRANSPARENCY, SECCHI DISC (INCHES)	05/01/75-05/01/75	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	04/17/91-01/06/93	8	36.5	73.75	233.	28.	4952.5	70.374	**	**	**	**
00094 SPECIFIC CONDUCTANCE,FIELD (UMHOS/CM @ 25C)	01/09/92-07/15/96	19	294.	319.105	757.	146.	16585.099	128.783	211.	241.	359.	451.
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/25/90-07/15/96	23	299.	373.522	1893.	137.	122151.897	349.502	185.4	221.	374.	574.8
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	01/09/92-07/15/96	19	8.9	8.7	13.1	5.2	5.886	2.426	5.8	6.2	10.	12.8
00300 OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	55	9.1	8.64	13.7	3.	8.64	2.939	4.5	6.2	11.1	12.02
00310p BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	74	2.	2.474	14.	0.5	3.44	1.855	1.	1.575	3.	4.
00340 COD, .25N K2CR2O7 MG/L	09/25/90-07/15/96	23	16.	17.13	26.	10.	17.391	4.17	11.8	14.	20.	24.4
00400p PH (STANDARD UNITS)	10/07/74-07/15/96	75	7.3	7.309	7.9	6.	0.12	0.347	7.	7.2	7.5	7.74
00400p CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	75	7.3	7.114	7.9	6.	0.159	0.399	7.	7.2	7.5	7.74
00400p MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	75	0.05	0.077	1.	0.013	0.018	0.134	0.018	0.032	0.063	0.1
00403 PH, LAB, STANDARD UNITS SU	09/25/90-07/15/96	23	7.8	7.578	8.2	6.8	0.183	0.427	6.94	7.2	7.9	8.1
00403 CONVERTED PH, LAB, STANDARD UNITS	09/25/90-07/15/96	23	7.8	7.379	8.2	6.8	0.224	0.474	6.94	7.2	7.9	8.1
00403 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	09/25/90-07/15/96	23	0.016	0.042	0.158	0.006	0.002	0.042	0.008	0.013	0.063	0.116
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	09/25/90-07/15/96	23	79.	87.957	205.	33.	1613.043	40.163	39.8	57.	112.	138.6
00500 RESIDUE, TOTAL (MG/L)	03/14/75-07/15/96	30	187.5	196.567	415.	131.	3058.737	55.306	146.1	159.5	212.	261.2
00505 RESIDUE, TOTAL VOLATILE (MG/L)	03/14/75-07/15/96	30	50.	53.867	117.	18.	516.671	22.73	29.3	37.75	65.	86.8
00510 RESIDUE, TOTAL FIXED (MG/L)	03/14/75-07/15/96	29	147.	143.241	328.	41.	3104.761	55.72	64.	107.5	175.5	197.
00530p RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	69	6.	15.428	210.	0.5	1220.053	34.929	1.5	1.75	13.	22.
00535p RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	69	2.	3.478	20.	0.	19.415	4.406	0.	1.25	4.	8.
00540p RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	68	3.	13.831	290.	0.	1696.079	41.183	0.5	1.5	9.	16.4
00610p NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	75	0.1	0.674	5.	0.02	1.234	1.111	0.02	0.05	0.9	1.959
00615p NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	75	0.02	0.068	0.48	0.001	0.009	0.094	0.005	0.005	0.12	0.194
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	46	0.59	0.708	2.019	0.09	0.184	0.429	0.244	0.398	0.888	1.402
00625p NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	74	0.7	1.142	6.299	0.05	1.496	1.223	0.3	0.475	1.349	2.75
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	10/20/76-06/26/79	28	0.85	0.954	2.3	0.025	0.453	0.673	0.025	0.433	1.45	2.12
00665 PHOSPHORUS, TOTAL (MG/L AS P)	09/25/90-07/15/96	24 ##	0.05	0.071	0.1	0.05	0.001	0.025	0.05	0.05	0.1	0.1
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	09/25/90-04/07/92	7	0.02	0.031	0.09	0.005	0.001	0.029	**	**	**	**
00680p CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	72	9.	9.085	19.	1.	15.17	3.895	4.45	6.	11.	14.
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	05/01/75-07/15/96	24	112.	112.667	200.	50.	1533.623	39.162	62.	77.	141.5	165.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

# Parameter Inventory for Station: MANA0007

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00940	CHLORIDE,TOTAL IN WATER MG/L	05/01/75-07/15/96	24	17.	23.042	137.	7.	652.303	25.54	9.5	12.25	21.5	37.
00945	SULFATE, TOTAL (MG/L AS SO4)	09/25/90-07/15/96	23	26.	25.174	36.	16.	41.15	6.415	16.4	20.	31.	34.6
00951	FLUORIDE, TOTAL (MG/L AS F)	09/25/90-01/06/93	10	0.245	0.224	0.34	0.11	0.007	0.082	0.113	0.148	0.293	0.339
00955	SILICA, DISSOLVED (MG/L AS SI02)	09/25/90-01/06/93	10	8.8	8.76	12.7	2.1	9.94	3.153	2.54	6.875	11.8	12.61
01002	ARSENIC, TOTAL (UG/L AS AS)	09/30/75-08/24/94	9 ##	1.	2.389	5.	1.	3.861	1.965	1.	1.	5.	5.
01003	ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	10/16/91-10/16/91	1	4.	4.	4.	4.	0.	0.	**	**	**	**
01012	BERYLLIUM, TOTAL (UG/L AS BE)	07/17/91-04/29/93	2 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01013	BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	10/16/91-10/16/91	1 ##	1.	1.	1.	1.	0.	0.	**	**	**	**
01027	CADMIUM, TOTAL (UG/L AS CD)	10/07/74-08/24/94	11 ##	5.	4.455	5.	1.5	1.523	1.234	1.7	5.	5.	5.
01028	CADMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	10/16/91-10/16/91	1	1.	1.	1.	1.	0.	0.	**	**	**	**
01029	CHROMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	10/16/91-10/16/91	1	31.	31.	31.	31.	0.	0.	**	**	**	**
01034	CHROMIUM, TOTAL (UG/L AS CR)	10/07/74-08/24/94	11 ##	5.	6.818	25.	5.	36.364	6.03	5.	5.	5.	21.
01042	COPPER, TOTAL (UG/L AS CU)	10/07/74-08/24/94	11 ##	5.	6.818	25.	5.	36.364	6.03	5.	5.	5.	21.
01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	10/16/91-10/16/91	1	38.	38.	38.	38.	0.	0.	**	**	**	**
01045	IRON, TOTAL (UG/L AS FE)	11/08/78-08/24/94	5	532.	513.	783.	250.	40692.	201.723	**	**	**	**
01051	LEAD, TOTAL (UG/L AS PB)	10/07/74-08/24/94	14	5.	9.679	31.	1.	122.446	11.066	1.	1.75	19.5	29.5
01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	10/16/91-10/16/91	1	23.	23.	23.	23.	0.	0.	**	**	**	**
01053	MANGANESE IN BOTTOM DEPOSITS (MG/KG AS MN DRY WGT)	10/16/91-10/16/91	1	537.	537.	537.	537.	0.	0.	**	**	**	**
01055	MANGANESE, TOTAL (UG/L AS MN)	11/08/78-08/24/94	4	81.	85.5	130.	50.	1147.667	33.877	**	**	**	**
01059	THALLIUM, TOTAL (UG/L AS TL)	07/17/91-04/29/93	2 ##	7.5	7.5	10.	5.	12.5	3.536	**	**	**	**
01065	NICKEL, DISSOLVED (UG/L AS NI)	10/07/74-04/19/79	8 ##	50.	44.375	50.	5.	253.125	15.91	**	**	**	**
01067	NICKEL, TOTAL (UG/L AS NI)	07/17/91-08/24/94	3 ##	5.	11.667	25.	5.	133.333	11.547	**	**	**	**
01068	NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	10/16/91-10/16/91	1	23.	23.	23.	23.	0.	0.	**	**	**	**
01092	ZINC, TOTAL (UG/L AS ZN)	10/07/74-08/24/94	11 ##	5.	7.909	25.	5.	38.091	6.172	5.	5.	10.	22.4
01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	10/16/91-10/16/91	1	89.	89.	89.	89.	0.	0.	**	**	**	**
01147	SELENIUM, TOTAL (UG/L AS SE)	07/17/91-08/24/94	3 ##	10.	8.333	10.	5.	8.333	2.887	**	**	**	**
01148	SELENIUM IN BOTTOM DEPOSITS (MG/KG AS SE DRY WGT)	10/16/91-10/16/91	1 ##	10.	10.	10.	10.	0.	0.	**	**	**	**
31505	COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	11/22/76-02/03/78	6	965.	1315.	4300.	70.	2562510.	1600.784	**	**	**	**
31505	LOG COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 3150	11/22/76-02/03/78	6	2.905	2.736	3.633	1.845	0.522	0.722	**	**	**	**
31505	GM COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506	GEOMETRIC MEAN =			545.017								
31616p	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	10/07/74-04/30/96	68	100.	326.471	4900.	40.	509521.686	713.808	50.	50.	300.	755.
31616p	LOG FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	10/07/74-04/30/96	68	2.	2.101	3.69	1.602	0.266	0.516	1.699	1.699	2.477	2.878
31616p	GM FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	GEOMETRIC MEAN =			126.26								
32240	TANNIN AND LIGNIN (MG/L)	07/21/92-01/06/93	2	0.85	0.85	1.4	0.3	0.605	0.778	**	**	**	**
34259	DELTA BENZENE HEXACHLORIDE TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34351	ENDOSULFAN SULFATE TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34356	ENDOSULFAN, BETA TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34361	ENDOSULFAN, ALPHA TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34366	ENDRIN ALDEHYDE TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34480	THALLIUM DRY WGTBOTMG/KG	10/16/91-10/16/91	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
34671	PCB - 1016 TOTWUG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
38745	2,4-DB WATER, TOTUG/L	08/02/93-08/02/93	1 ##	0.15	0.15	0.15	0.15	0.	0.	**	**	**	**
39032	PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39061	PCP (PENTACHLOROPHENOL) IN BOT DEPOS DRY SOL UG/KG	10/16/91-10/16/91	1 ##	25.	25.	25.	25.	0.	0.	**	**	**	**
39300	P,P' DDT IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39310	P,P' DDD IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39320	P,P' DDE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39330	ALDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39337	ALPHA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39338	BETA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39340	GAMMA-BHC(LINDANE),WHOLE WATER,UG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39351	CHLORDANE(TECH MIX&METABS),SEDIMENTS,DRY WGT,UG/KG	10/16/91-10/16/91	1 ##	250.	250.	250.	250.	0.	0.	**	**	**	**
39363	DDD IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-10/16/91	1 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
39368	DDE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-10/16/91	1 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
39373	DDT IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-10/16/91	1 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
39380	DIELDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39383	DIELDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	10/16/91-10/16/91	1 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
39390	ENDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.025	0.025	0.025	0.025	0.	0.	**	**	**	**
39393	ENDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-10/16/91	1 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
39400	TOXAPHENE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39403	TOXAPHENE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	10/16/91-10/16/91	1 ##	500.	500.	500.	500.	0.	0.	**	**	**	**
39410	HEPTACHLOR IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39413	HEPTACHLOR IN BOT. DEP. (UG/KILOGRAM DRY SOLIDS)	10/16/91-10/16/91	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0007

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
39420	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**
39488	PCB - 1221 IN THE WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**
39492	PCB - 1232 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**
39496	PCB - 1242 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**
39500	PCB - 1248 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**
39508	PCB - 1260 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**
39516	PCBS IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**
39526	PCBS TOTAL,IN SEDIMENT,DRY (ISOMER ANALYSES) UG/KG	10/16/91-10/16/91	1 ##	250.	250.	250.	250.	0.	0.	**	**	**
39730	2,4-D IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.15	0.15	0.15	0.15	0.	0.	**	**	**
39740	2,4,5-T IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**
39760	SILVEX IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**
46570	HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	04/29/93-08/24/94	2	79.5	79.5	81.	78.	4.5	2.121	**	**	**
50060	CHLORINE, TOTAL RESIDUAL (MG/L)	02/19/75-06/26/79	31	0.	0.035	0.3	0.	0.008	0.088	0.	0.	0.2
70505	PHOSPHATE,TOTAL,COLORIMETRIC METHOD (MG/L AS P)	10/07/74-06/26/79	51	0.1	0.564	19.5	0.05	7.344	2.71	0.05	0.05	0.3
70507p	PHOSPHORUS,IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	66	0.06	0.369	17.	0.005	4.341	2.083	0.017	0.03	0.145
71900	MERCURY, TOTAL (UG/L AS HG)	10/07/74-08/24/94	10 ##	0.25	0.225	0.3	0.15	0.003	0.054	0.15	0.15	0.25
71921	MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	10/16/91-10/16/91	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**
77825	ALACHLOR WHOLE WATER,UG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**
82078	TURBIDITY,FIELD NEPHELOMETRIC TURBIDITY UNITS,NTU	07/21/92-04/20/94	8	4.4	12.375	62.	1.6	416.442	20.407	**	**	**

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### EPA Water Quality Criteria Analysis for Station: MANA0007

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
			Obs			Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00070	TURBIDITY, JACKSON CANDLE UNITS	Other-Hi Lim.	50.	7	1	0.14	3	1	0.33	2	0	0.00	2	0	0.00		
00076	TURBIDITY, HACH TURBIDIMETER	Other-Hi Lim.	50.	8	0	0.00	4	0	0.00	2	0	0.00	2	0	0.00		
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	19	0	0.00	9	0	0.00	5	0	0.00	5	0	0.00		
00300	OXYGEN, DISSOLVED	Other-Lo Lim.	4.	55	4	0.07	23	0	0.00	20	2	0.10	12	2	0.17		
00400	PH	Other-Hi Lim.	9.	75	0	0.00	33	0	0.00	25	0	0.00	17	0	0.00		
		Other-Lo Lim.	6.5	75	2	0.03	33	1	0.03	25	1	0.04	17	0	0.00		
00403	PH, LAB	Other-Hi Lim.	9.	23	0	0.00	11	0	0.00	6	0	0.00	6	0	0.00		
		Other-Lo Lim.	6.5	23	0	0.00	11	0	0.00	6	0	0.00	6	0	0.00		
00615	NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	75	0	0.00	32	0	0.00	26	0	0.00	17	0	0.00		
00620	NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	46	0	0.00	20	0	0.00	13	0	0.00	13	0	0.00		
00630	NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	28	0	0.00	12	0	0.00	12	0	0.00	4	0	0.00		
00940	CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	24	0	0.00	11	0	0.00	7	0	0.00	6	0	0.00		
		Drinking Water	250.	24	0	0.00	11	0	0.00	7	0	0.00	6	0	0.00		
00945	SULFATE, TOTAL (AS SO4)	Drinking Water	250.	23	0	0.00	11	0	0.00	6	0	0.00	6	0	0.00		
00951	FLUORIDE, TOTAL AS F	Drinking Water	4.	10	0	0.00	5	0	0.00	2	0	0.00	3	0	0.00		
01002	ARSENIC, TOTAL	Fresh Acute	360.	9	0	0.00	2	0	0.00	4	0	0.00	3	0	0.00		
		Drinking Water	50.	9	0	0.00	2	0	0.00	4	0	0.00	3	0	0.00		
01012	BERYLLIUM, TOTAL	Fresh Acute	130.	2	0	0.00				1	0	0.00	1	0	0.00		
		Drinking Water	4.	0 &	0	0.00											
01027	CADMIUM, TOTAL	Fresh Acute	3.9	2 &	0	0.00				1	0	0.00	1	0	0.00		
		Drinking Water	5.	2 &	0	0.00				1	0	0.00	1	0	0.00		
01034	CHROMIUM, TOTAL	Drinking Water	100.	11	0	0.00	3	0	0.00	5	0	0.00	3	0	0.00		
01042	COPPER, TOTAL	Fresh Acute	18.	10 &	0	0.00	3	0	0.00	5	0	0.00	2	0	0.00		
		Drinking Water	1300.	11	0	0.00	3	0	0.00	5	0	0.00	3	0	0.00		
01051	LEAD, TOTAL	Fresh Acute	82.	14	0	0.00	3	0	0.00	6	0	0.00	5	0	0.00		
		Drinking Water	15.	14	4	0.29	3	0	0.00	6	2	0.33	5	2	0.40		
01059	THALLIUM, TOTAL	Fresh Acute	1400.	2	0	0.00				1	0	0.00	1	0	0.00		
		Drinking Water	2.	0 &	0	0.00											
01065	NICKEL, DISSOLVED	Fresh Acute	1400.	8	0	0.00	3	0	0.00	4	0	0.00	1	0	0.00		
		Drinking Water	100.	8	0	0.00	3	0	0.00	4	0	0.00	1	0	0.00		
01067	NICKEL, TOTAL	Fresh Acute	1400.	3	0	0.00				1	0	0.00	2	0	0.00		
		Drinking Water	100.	3	0	0.00				1	0	0.00	2	0	0.00		
01092	ZINC, TOTAL	Fresh Acute	120.	11	0	0.00	3	0	0.00	5	0	0.00	3	0	0.00		
		Drinking Water	5000.	11	0	0.00	3	0	0.00	5	0	0.00	3	0	0.00		

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

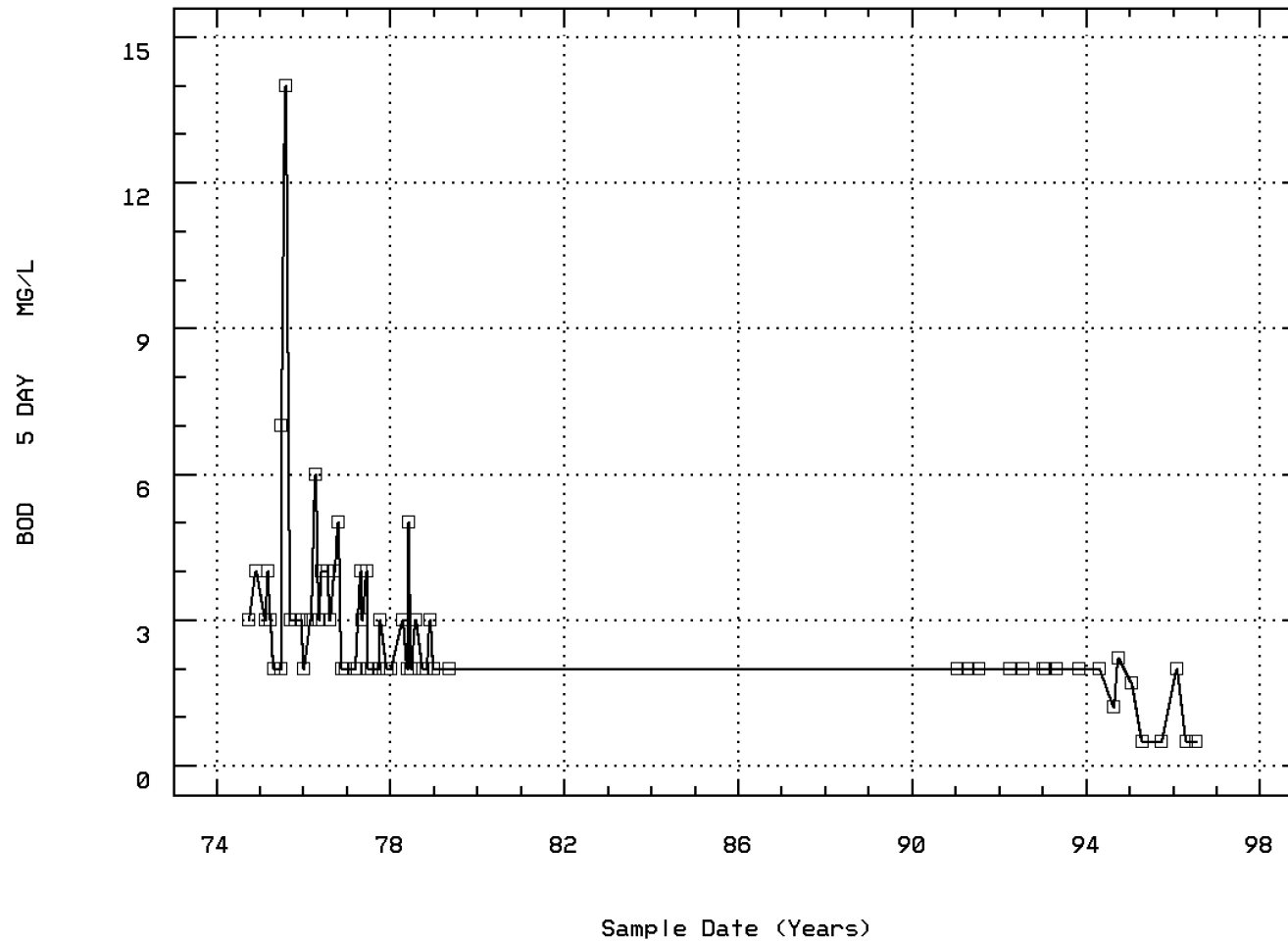
### EPA Water Quality Criteria Analysis for Station: MANA0007

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
01147 SELENIUM, TOTAL	Fresh Acute	20.	3	0	0.00				1	0	0.00	2	0	0.00			
	Drinking Water	50.	3	0	0.00				1	0	0.00	2	0	0.00			
31505 COLIFORM, TOTAL, MPN, CONF. TEST, 35C	Other-Hi Lim.	1000.	6	3	0.50				3	2	0.67	1	1	1.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	68	23	0.34	29	0	0.00	25	11	0.44	14	4	0.29			
34356 ENDOSULFAN, BETA, TOTAL	Fresh Acute	0.22	1	0	0.00							1	0	0.00			
34361 ENDOSULFAN, ALPHA, TOTAL	Fresh Acute	0.22	1	0	0.00							1	0	0.00			
39032 PCP (PENTACHLOROPHENOL) WHOLE WATER SAMP	Fresh Acute	20.	1	0	0.00							1	0	0.00			
	Drinking Water	1.	1	0	0.00							1	0	0.00			
39300 P,P' DDT IN WHOLE WATER SAMPLE	Fresh Acute	1.1	1	0	0.00							1	0	0.00			
39310 P,P' DDD IN WHOLE WATER SAMPLE	Fresh Acute	0.6	1	0	0.00							1	0	0.00			
39320 P,P' DDE IN WHOLE WATER SAMPLE	Fresh Acute	1050.	1	0	0.00							1	0	0.00			
39330 ALDRIN IN WHOLE WATER SAMPLE	Fresh Acute	3.	1	0	0.00							1	0	0.00			
39340 GAMMA-BHC(LINDANE), WHOLE WATER	Fresh Acute	2.	1	0	0.00							1	0	0.00			
	Drinking Water	0.2	1	0	0.00							1	0	0.00			
39380 DIELDRIN IN WHOLE WATER SAMPLE	Fresh Acute	2.5	1	0	0.00							1	0	0.00			
39390 ENDRIN IN WHOLE WATER SAMPLE	Fresh Acute	0.18	1	0	0.00							1	0	0.00			
	Drinking Water	2.	1	0	0.00							1	0	0.00			
39400 TOXAPHENE IN WHOLE WATER SAMPLE	Fresh Acute	0.73	1	0	0.00							1	0	0.00			
	Drinking Water	3.	1	0	0.00							1	0	0.00			
39410 HEPTACHLOR IN WHOLE WATER SAMPLE	Fresh Acute	0.52	1	0	0.00							1	0	0.00			
	Drinking Water	0.4	1	0	0.00							1	0	0.00			
39420 HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE	Fresh Acute	0.52	1	0	0.00							1	0	0.00			
	Drinking Water	0.2	1	0	0.00							1	0	0.00			
39730 2,4-D IN WHOLE WATER SAMPLE	Drinking Water	70.	1	0	0.00							1	0	0.00			
39760 SILVEX IN WHOLE WATER SAMPLE	Drinking Water	50.	1	0	0.00							1	0	0.00			
50060 CHLORINE, TOTAL RESIDUAL	Fresh Acute	0.019	31	5	0.16	14	1	0.07	10	3	0.30	7	1	0.14			
71900 MERCURY, TOTAL	Fresh Acute	2.4	10	0	0.00	3	0	0.00	4	0	0.00	3	0	0.00			
	Drinking Water	2.	10	0	0.00	3	0	0.00	4	0	0.00	3	0	0.00			
82078 TURBIDITY, FIELD	Other-Hi Lim.	50.	8	1	0.13	4	1	0.25	2	0	0.00	2	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

Station: MANA0007 Parameter Code: 00310

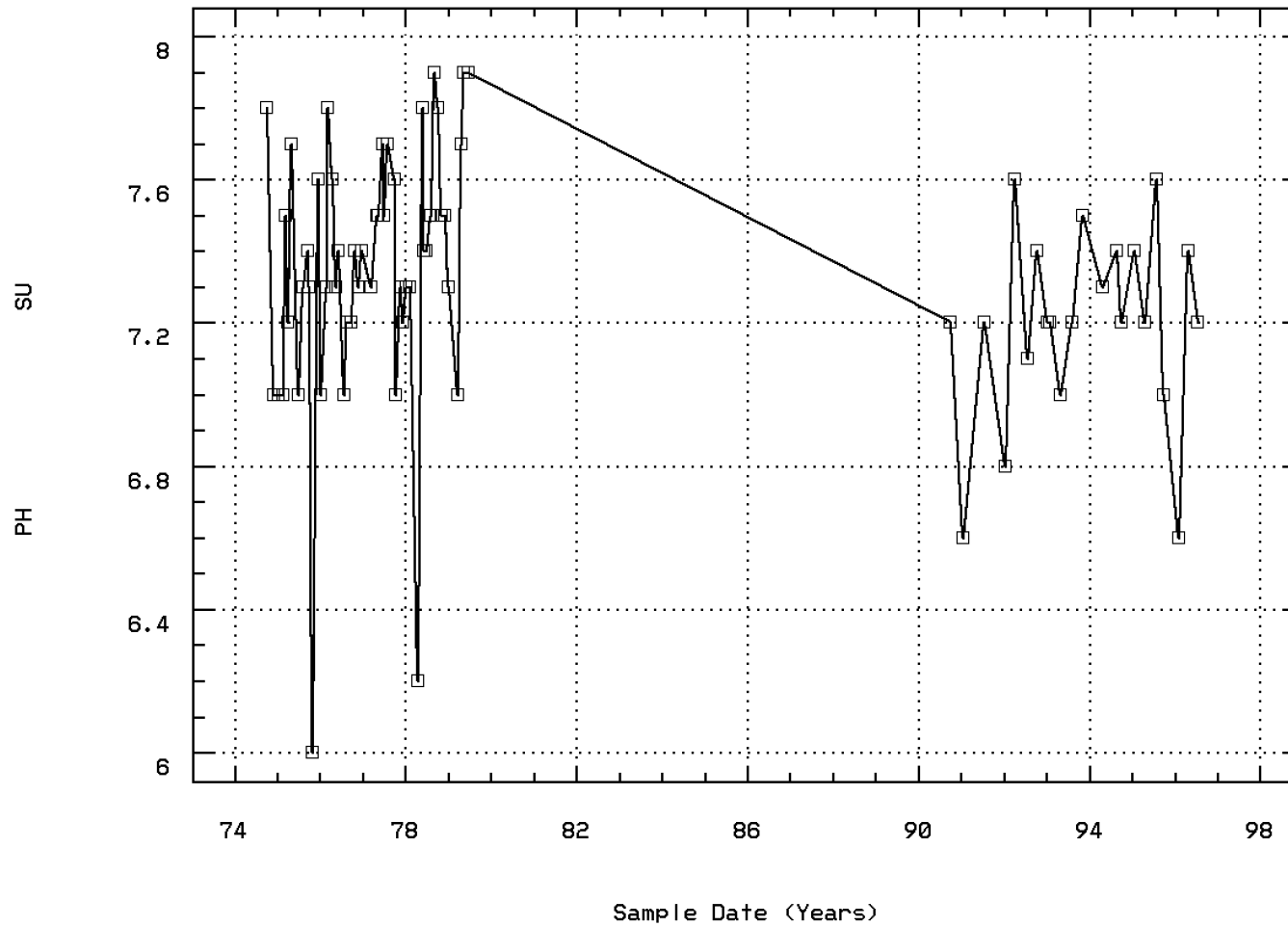
BOD, 5 DAY, 20 DEG C



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00400

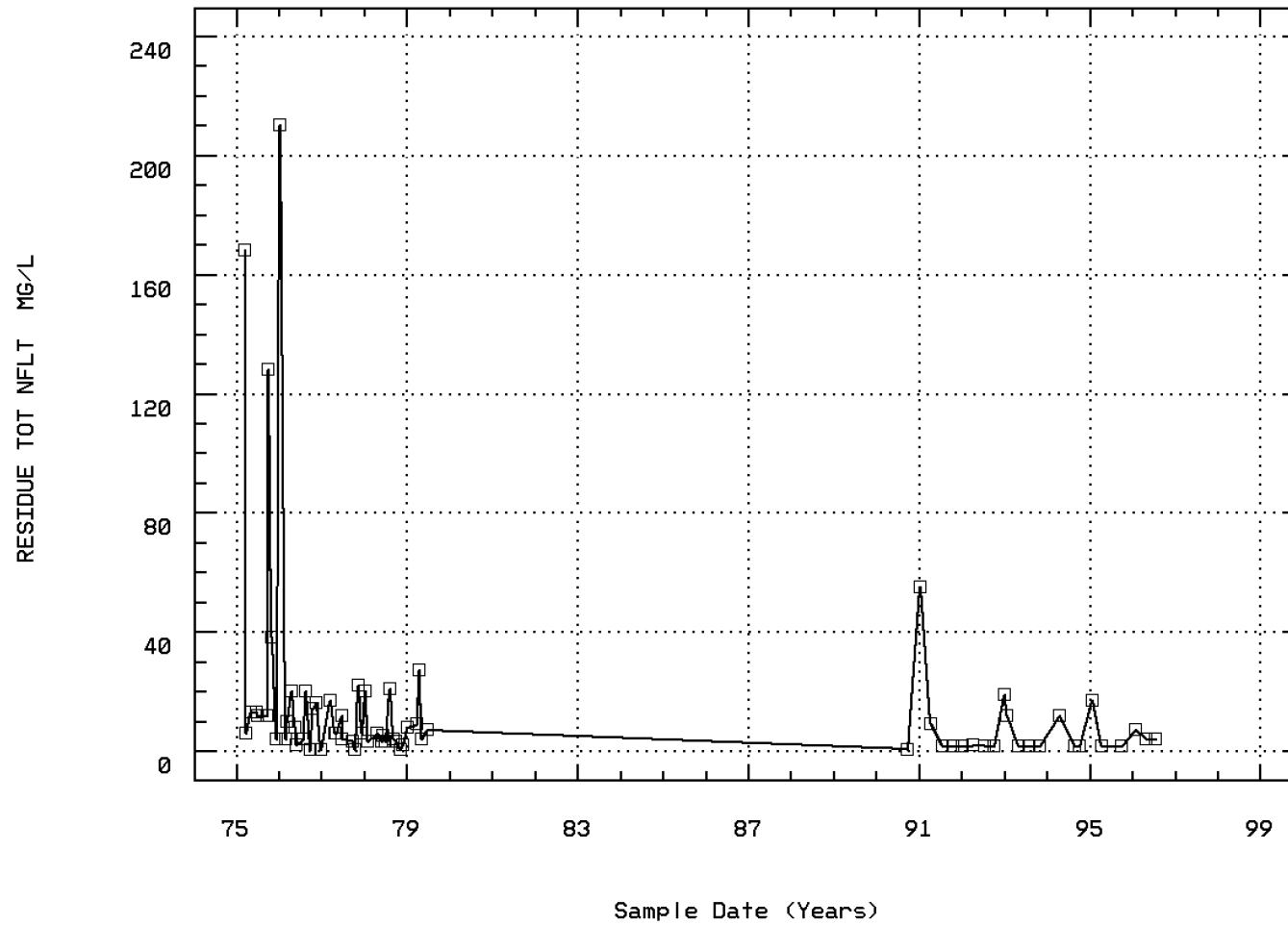
PH (STANDARD UNITS)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00530

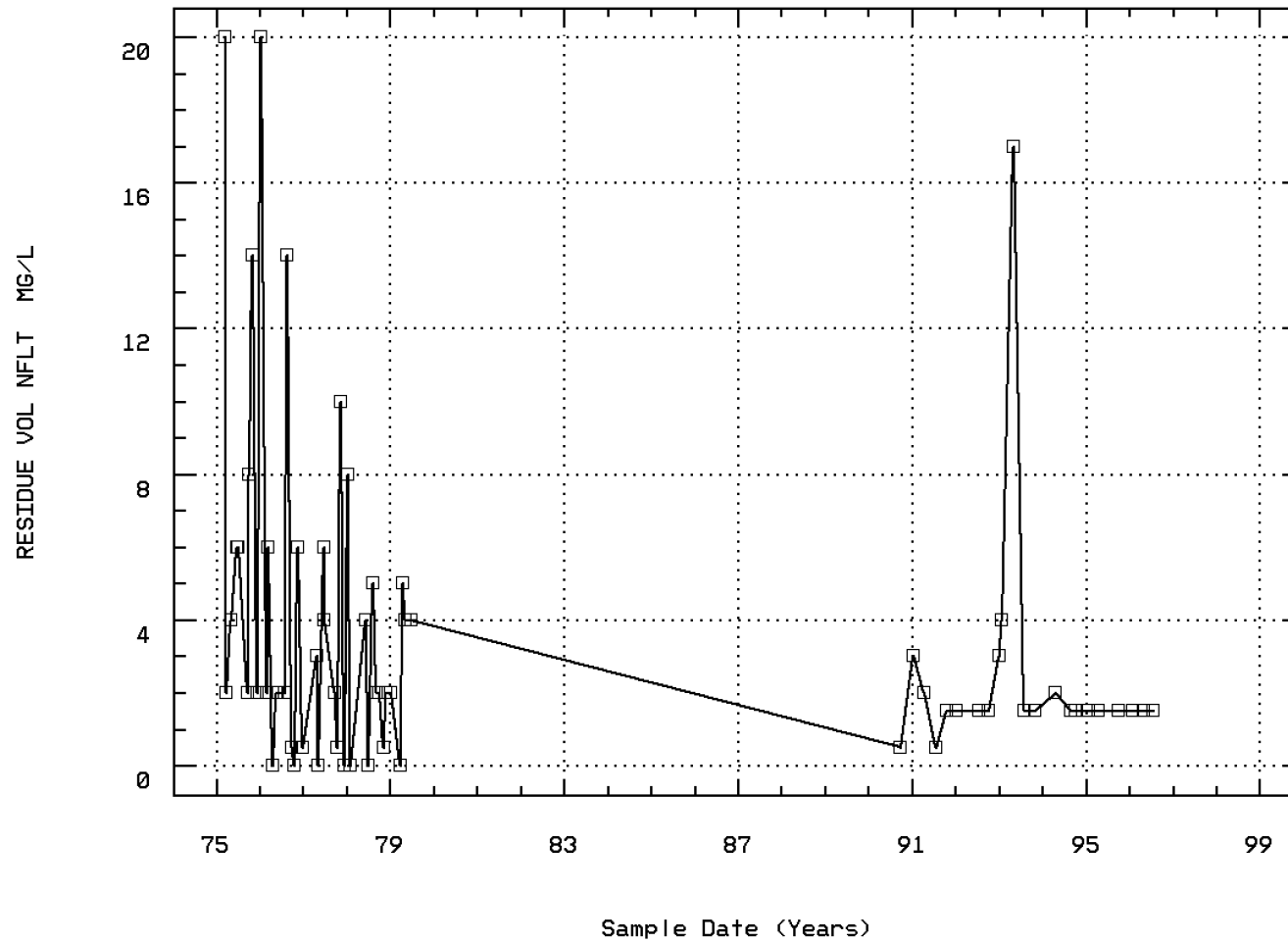
RESIDUE, TOTAL NONFILTRABLE (MG/L)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00535

RESIDUE, VOLATILE NONFILTRABLE (MG/L)

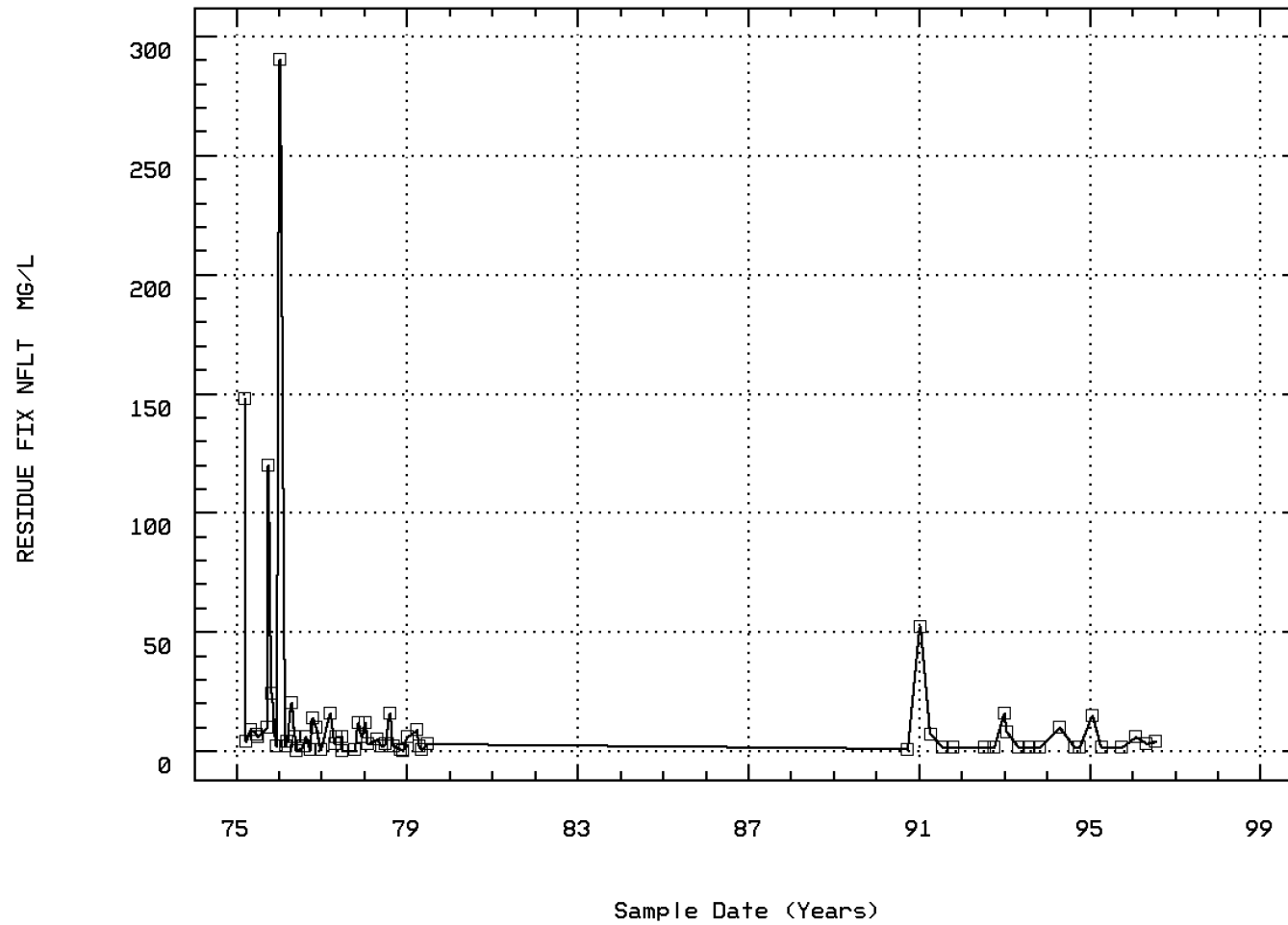


RT. 29/211 BRIDGE



Station: MANA0007 Parameter Code: 00540

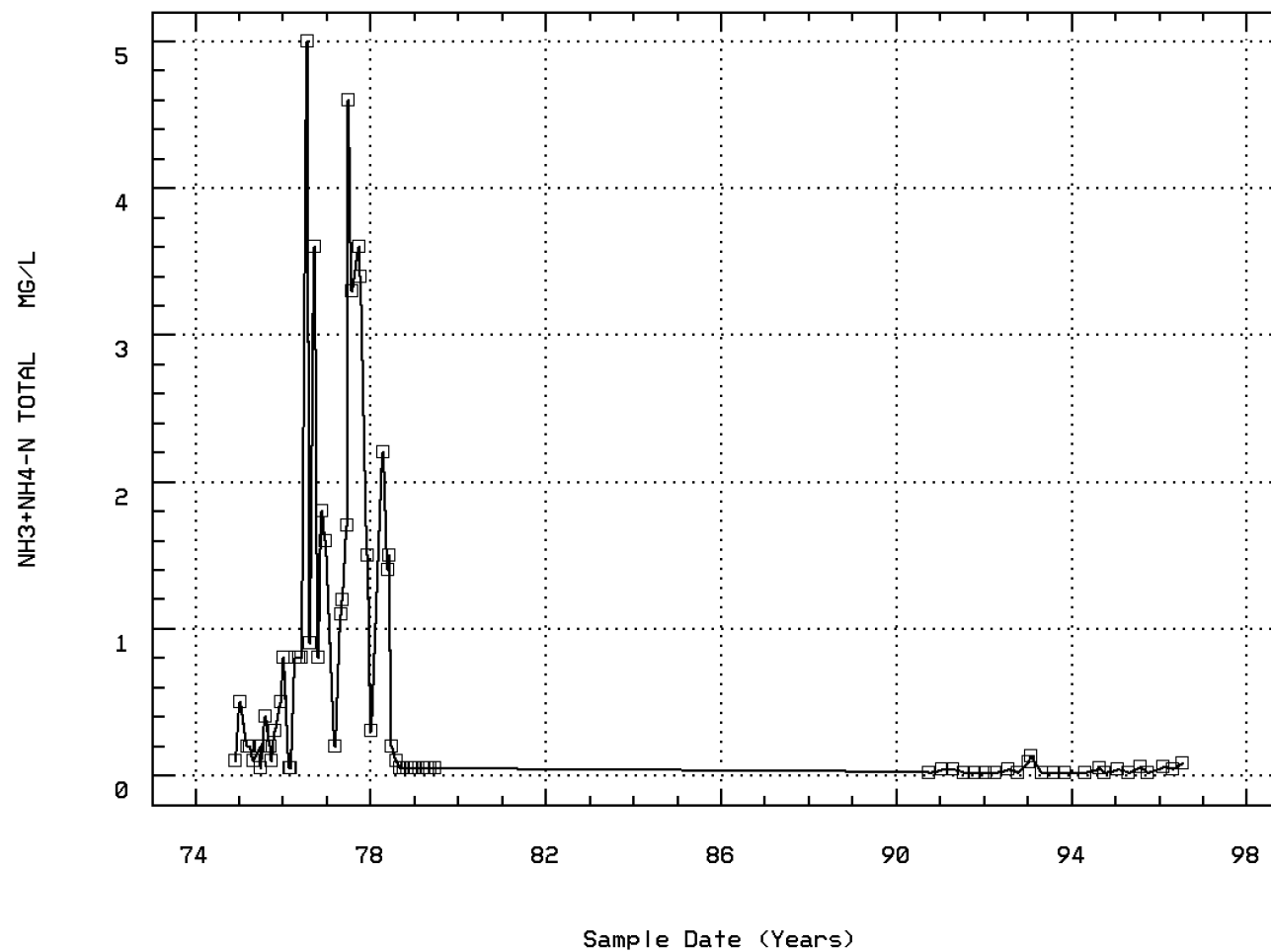
RESIDUE, FIXED NONFILTRABLE (MG/L)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00610

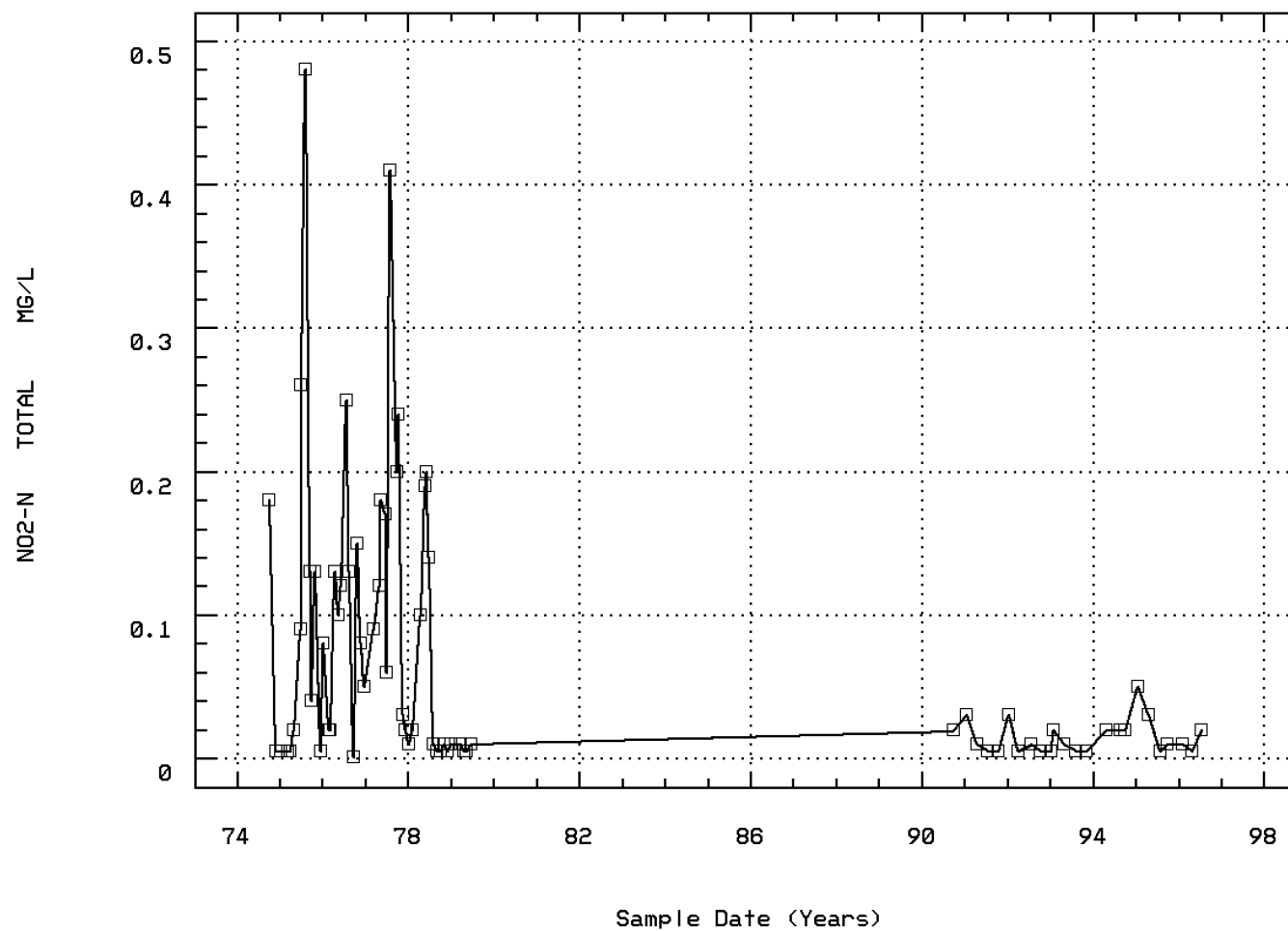
NITROGEN, AMMONIA, TOTAL (MG/L AS N)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00615

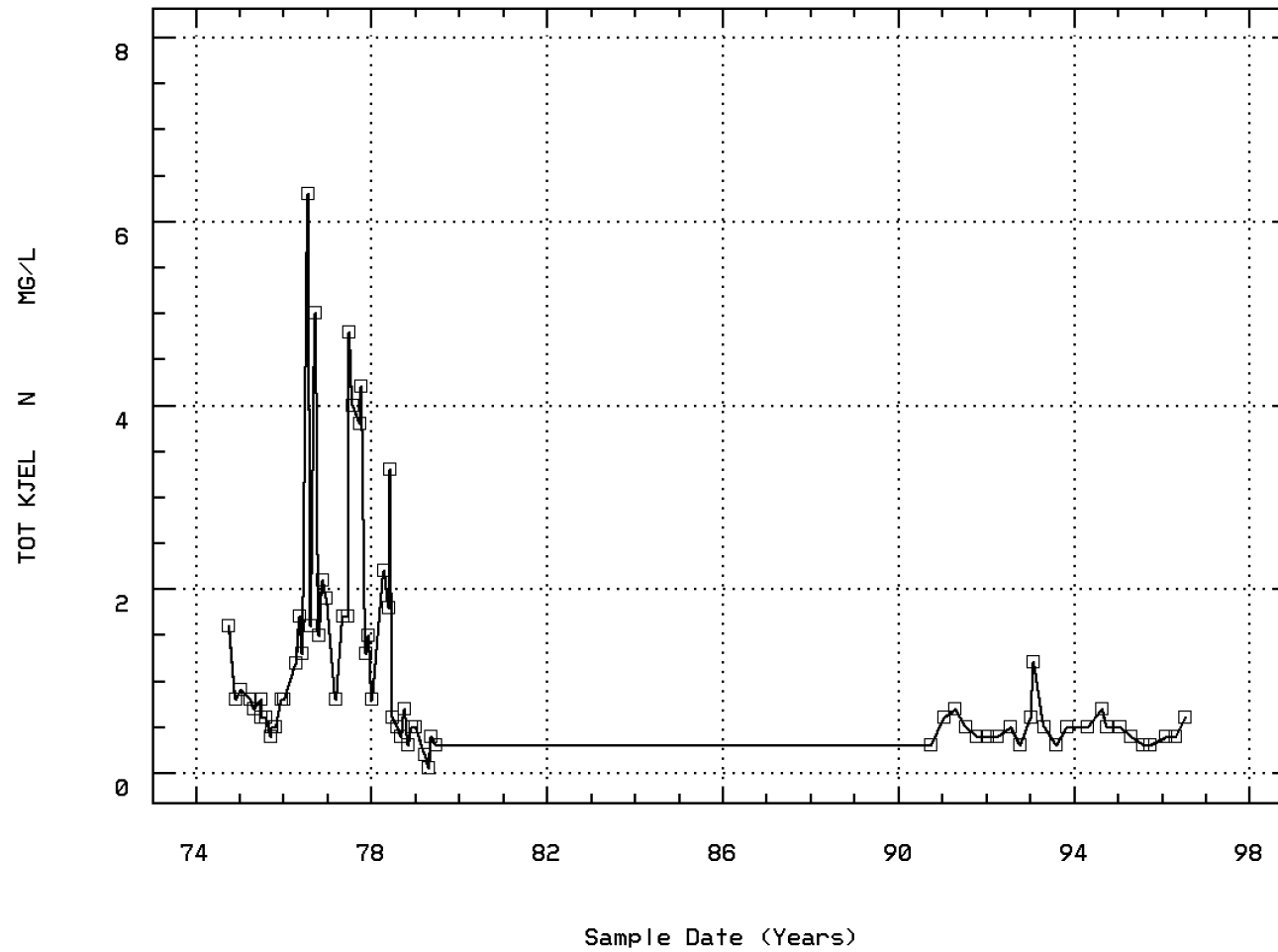
NITRITE NITROGEN, TOTAL (MG/L AS N)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00625

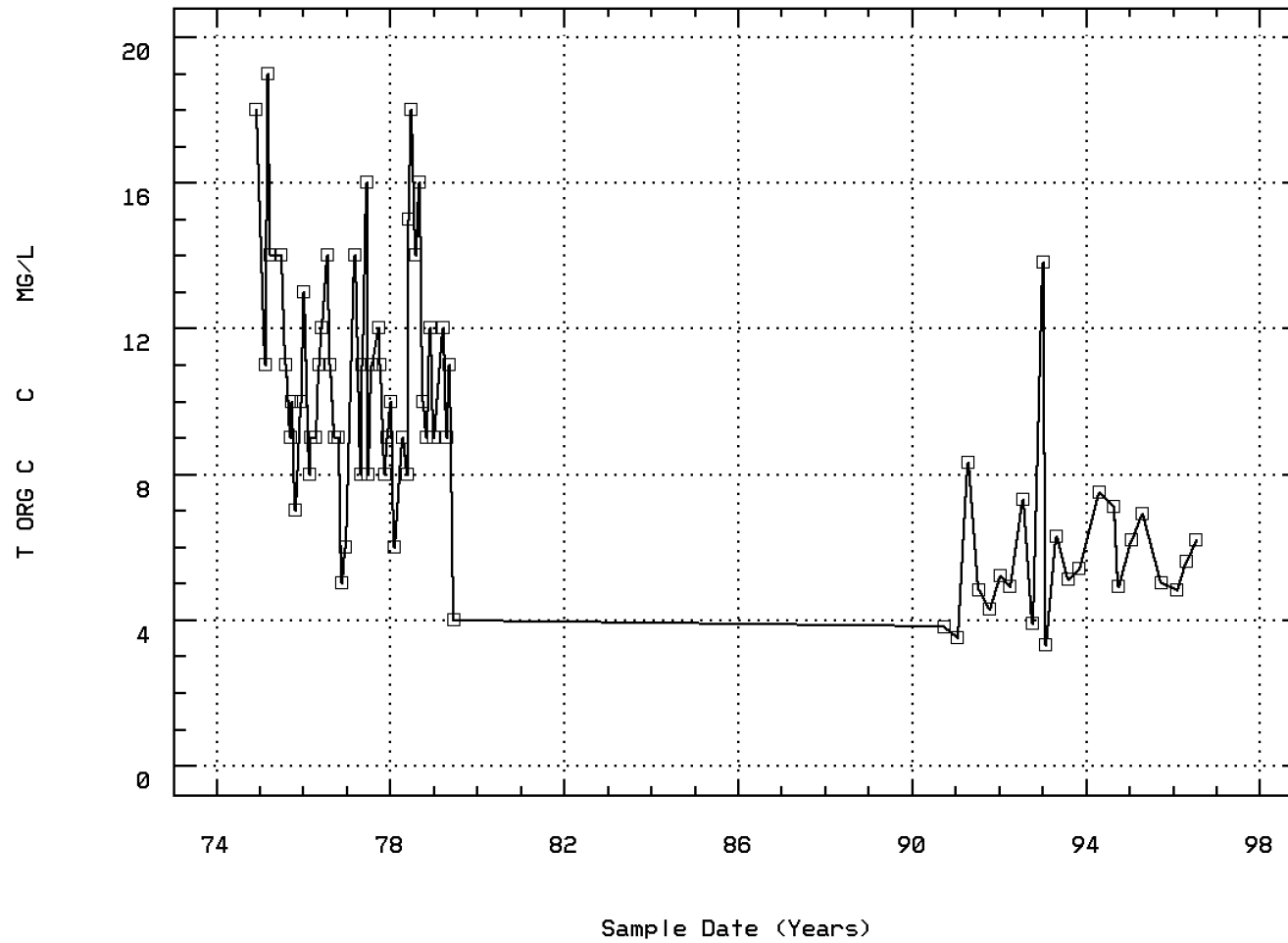
NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00680

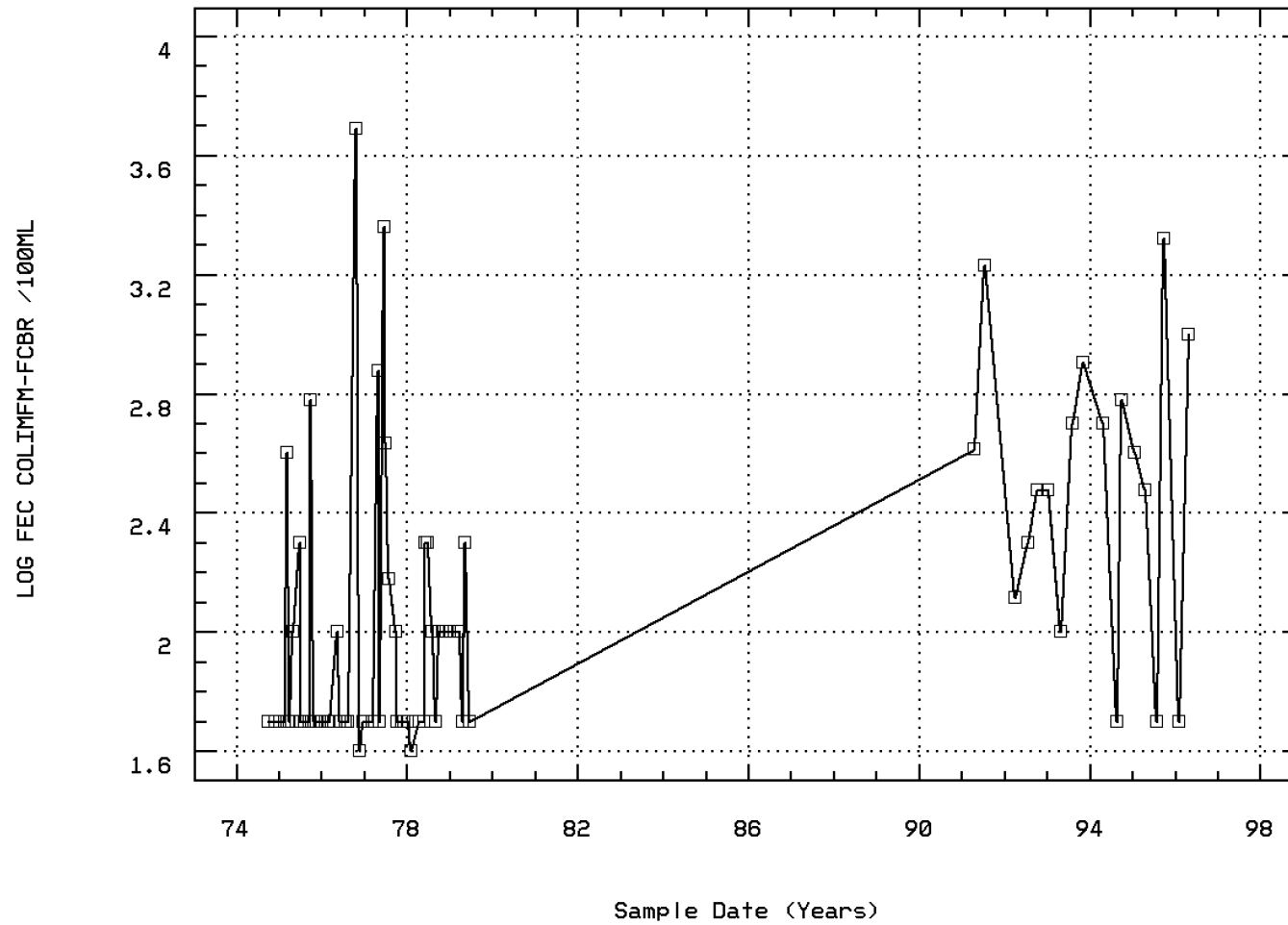
CARBON, TOTAL ORGANIC (MG/L AS C)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 31616

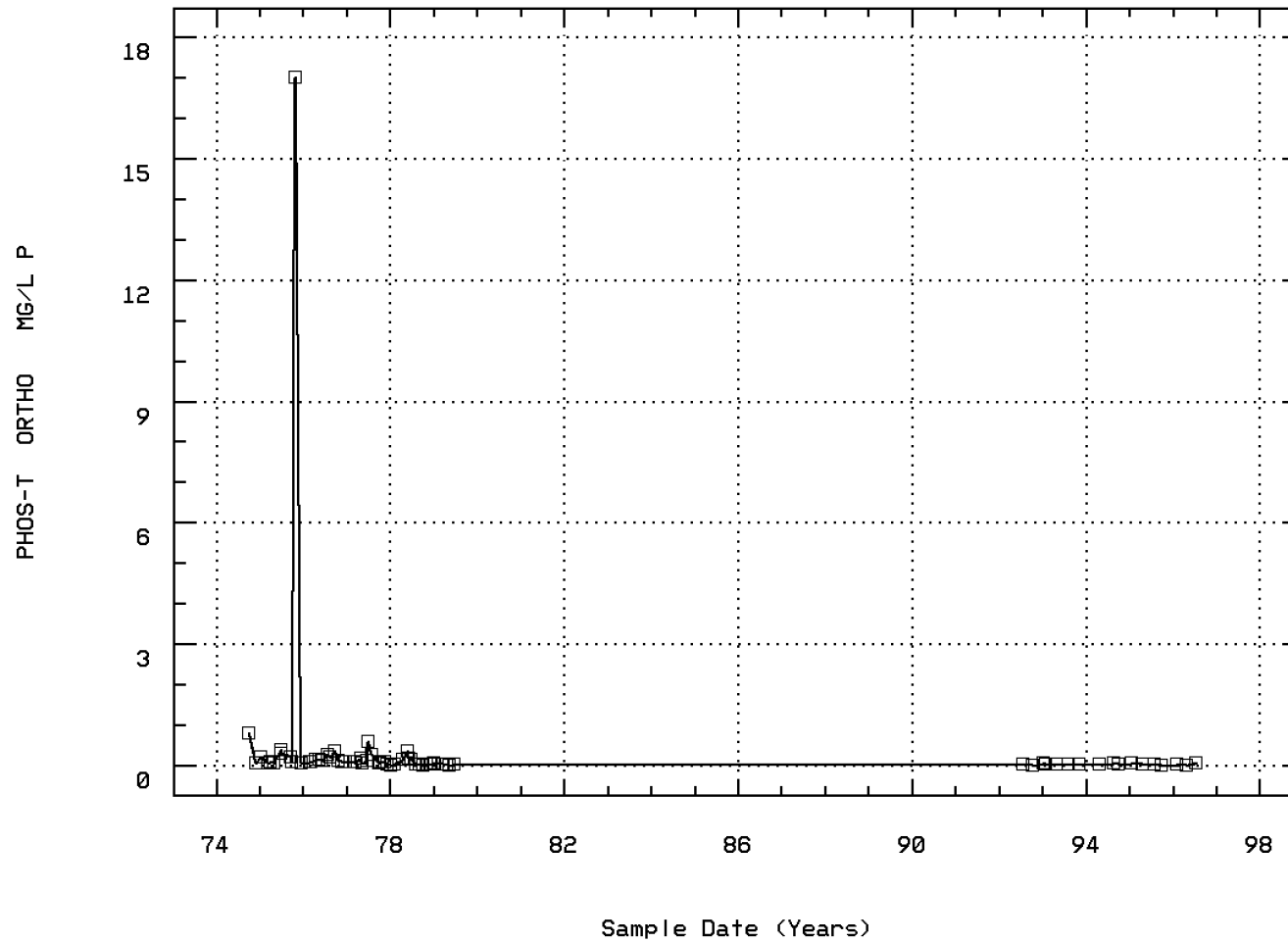
LOG FECAL COLIFORM, MEMBR FILTER, M-FC BR



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 70507

PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/



RT. 29/211 BRIDGE

### Annual Analysis for 1974 - Station MANA0007

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	2	8.3	8.3	12.2	4.4	30.42	5.515	**	**	**	**
00300	OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	2	8.8	8.8	11.4	6.2	13.52	3.677	**	**	**	**
00310	BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	2	3.5	3.5	4.	3.	0.5	0.707	**	**	**	**
00400	PH (STANDARD UNITS)	10/07/74-07/15/96	2	7.4	7.4	7.8	7.	0.32	0.566	**	**	**	**
00400	CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	2	7.237	7.237	7.8	7.	0.373	0.611	**	**	**	**
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	2	0.058	0.058	0.1	0.016	0.004	0.06	**	**	**	**
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	2	0.55	0.55	1.	0.1	0.405	0.636	**	**	**	**
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	2##	0.093	0.093	0.18	0.005	0.015	0.124	**	**	**	**
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	2	1.2	1.2	1.599	0.8	0.319	0.565	**	**	**	**
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	1	18.	18.	18.	18.	0.	0.	**	**	**	**
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	2##	50.	50.	50.	50.	0.	0.	**	**	**	**
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	2##	1.699	1.699	1.699	1.699	0.	0.	**	**	**	**
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			50.								
70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	10/07/74-06/26/79	2	0.45	0.45	0.8	0.1	0.245	0.495	**	**	**	**
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	2##	0.425	0.425	0.8	0.05	0.281	0.53	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1975 - Station MANA0007

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	12	11.1	12.817	23.9	2.2	62.276	7.892	3.04	6.1	21.1	23.9
00300	OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	11	9.1	8.382	11.8	3.2	10.08	3.175	3.36	4.7	11.4	11.76
00310	BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	11	3.	4.091	14.	1.	13.091	3.618	1.2	2.	4.	12.6
00400	PH (STANDARD UNITS)	10/07/74-07/15/96	12	7.25	7.167	7.7	6.	0.195	0.442	6.3	7.	7.475	7.67
00400	CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	12	7.247	6.854	7.7	6.	0.302	0.549	6.3	7.	7.475	7.67
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	12	0.057	0.14	1.	0.02	0.074	0.273	0.022	0.034	0.1	0.73
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	9	13.	43.778	168.	4.	3685.194	60.706	4.	9.	83.	168.
00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	9	6.	7.111	20.	2.	38.111	6.173	2.	2.	11.	20.
00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	9	9.	36.667	148.	2.	3133.25	55.975	2.	5.	72.	148.
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	11	0.2	0.25	0.5	0.05	0.025	0.157	0.06	0.1	0.4	0.5
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	11	0.04	0.106	0.48	0.005	0.022	0.147	0.005	0.005	0.13	0.436
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	11	0.7	0.691	1.	0.4	0.035	0.187	0.42	0.5	0.8	0.98
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	10	10.5	10.6	19.	1.	22.489	4.742	1.6	8.5	14.	18.5
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	12 ##	50.	141.667	600.	50.	31742.424	178.164	50.	50.	175.	540.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	12 ##	1.699	1.939	2.778	1.699	0.158	0.398	1.699	1.699	2.226	2.725
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			86.979								
70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	10/07/74-06/26/79	11	0.3	2.005	19.5	0.05	33.688	5.804	0.06	0.1	0.4	15.68
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	10	0.15	1.845	17.	0.05	28.368	5.326	0.05	0.058	0.325	15.34

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1976 - Station MANA0007

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	12	13.8	13.317	24.4	0.	83.22	9.122	0.18	5.25	21.925	24.07
00300	OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	12	8.9	8.383	12.9	3.	10.567	3.251	3.57	5.45	11.475	12.57
00310	BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	12	3.	3.25	6.	1.	2.023	1.422	1.3	2.	4.	5.7
00400	PH (STANDARD UNITS)	10/07/74-07/15/96	12	7.3	7.325	7.8	7.	0.051	0.226	7.	7.2	7.4	7.74
00400	CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	12	7.3	7.275	7.8	7.	0.054	0.232	7.	7.2	7.4	7.74
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	12	0.05	0.053	0.1	0.016	0.001	0.026	0.019	0.04	0.063	0.1
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	12	9.	25.75	210.	0.5	3417.795	58.462	0.5	2.5	19.	153.
00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	12	2.	4.583	20.	0.	39.311	6.27	0.	0.5	6.	18.2
00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	12	5.	29.583	290.	0.	6762.765	82.236	0.15	0.875	13.	209.
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	12	0.8	1.416	5.	0.05	2.153	1.467	0.05	0.8	1.749	4.58

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot



### Annual Analysis for 1976 - Station MANA0007

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	12	0.09	0.094	0.25	0.001	0.005	0.069	0.006	0.028	0.13	0.22
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	12	1.55	2.116	6.299	0.8	2.947	1.717	0.86	1.05	2.049	5.909
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	12	9.	9.667	14.	5.	7.152	2.674	5.3	8.25	11.75	13.7
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	10 ##	50.	539.	4900.	40.	2348210.	1532.387	41.	50.	62.5	4420.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	10 ##	1.699	1.919	3.69	1.602	0.398	0.631	1.612	1.699	1.774	3.521
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			82.89								
70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	10/07/74-06/26/79	12	0.2	0.217	0.5	0.1	0.022	0.147	0.1	0.1	0.275	0.5
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	11	0.13	0.156	0.36	0.08	0.008	0.091	0.08	0.09	0.21	0.344

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1977 - Station MANA0007

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th	
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	9	14.	13.533	26.	1.	79.318	8.906	1.	4.85	21.75	26.
00300	OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	9	7.4	7.678	11.9	3.4	6.967	2.639	3.4	5.9	10.	11.9
00310	BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	10	2.	2.5	4.	1.	0.944	0.972	1.1	2.	3.25	4.
00400	PH (STANDARD UNITS)	10/07/74-07/15/96	10	7.5	7.43	7.7	7.	0.051	0.226	7.02	7.275	7.625	7.7
00400	CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	10	7.5	7.373	7.7	7.	0.055	0.234	7.02	7.275	7.625	7.7
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	10	0.032	0.042	0.1	0.02	0.001	0.025	0.02	0.024	0.053	0.096
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	9	6.	8.5	22.	0.5	50.	7.071	0.5	3.5	14.5	22.
00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	9	2.	2.944	10.	0.	11.028	3.321	0.	0.25	5.	10.
00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	9	6.	5.611	16.	0.	29.361	5.419	0.	0.75	9.	16.
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	10	1.6	2.159	4.599	0.2	2.082	1.443	0.28	1.074	3.449	4.499
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	10	0.145	0.152	0.41	0.02	0.014	0.117	0.021	0.053	0.21	0.393
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	9	1.699	2.644	4.799	0.8	2.317	1.522	0.8	1.4	4.1	4.799
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	10	11.	10.8	16.	8.	7.289	2.7	8.	8.	12.5	15.8
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	10 ##	75.	398.	2300.	50.	499817.778	706.978	50.	50.	510.	2145.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	10 ##	1.849	2.154	3.362	1.699	0.363	0.603	1.699	1.699	2.694	3.313
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			142.6								
70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	10/07/74-06/26/79	10	0.1	0.145	0.6	0.05	0.027	0.166	0.05	0.05	0.125	0.56
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	10	0.095	0.162	0.6	0.04	0.029	0.17	0.042	0.06	0.213	0.568

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1978 - Station MANA0007

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	12	14.5	15.058	26.	0.2	95.159	9.755	0.29	7.125	25.	26.
00300	OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	12	7.7	8.458	13.7	4.2	9.57	3.094	4.47	6.2	10.975	13.58
00310	BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	11	2.	2.364	5.	1.	1.255	1.12	1.	2.	3.	4.6
00400	PH (STANDARD UNITS)	10/07/74-07/15/96	12	7.5	7.425	7.9	6.2	0.187	0.433	6.53	7.325	7.725	7.87
00400	CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	12	7.5	7.087	7.9	6.2	0.312	0.559	6.53	7.325	7.725	7.87
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	12	0.032	0.082	0.631	0.013	0.03	0.173	0.014	0.02	0.048	0.457
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	11	3.	6.409	21.	0.5	50.641	7.116	0.8	3.	6.	20.8
00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	11	2.	2.318	8.	0.	6.014	2.452	0.	0.5	4.	7.4
00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	11	2.	4.136	16.	0.	26.505	5.148	0.1	1.	5.	15.2
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	11	0.2	0.627	2.199	0.05	0.587	0.766	0.05	0.05	1.399	2.059
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	11	0.01	0.063	0.2	0.005	0.006	0.079	0.005	0.005	0.14	0.198
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	11	0.7	1.1	3.3	0.3	0.89	0.943	0.32	0.5	1.799	3.08
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	11	10.	11.545	18.	6.	14.073	3.751	6.4	9.	15.	17.6
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	11	100.	94.545	200.	40.	3327.273	57.683	42.	50.	100.	200.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	11	2.	1.909	2.301	1.602	0.061	0.247	1.621	1.699	2.	2.301
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			81.113								
70505	PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	10/07/74-06/26/79	11 ##	0.05	0.123	0.4	0.05	0.019	0.138	0.05	0.05	0.1	0.4

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1978 - Station MANA0007

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
70507 PHOSPHORUS,IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	11	0.03	0.094	0.37	0.005	0.013	0.115	0.005	0.02	0.16	0.334

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1979 - Station MANA0007

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	5	8.	8.88	20.9	0.	65.697	8.105	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	5	10.8	11.02	13.6	9.6	2.442	1.563	**	**	**	**
00310 BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	5	1.	1.4	2.	1.	0.3	0.548	**	**	**	**
00400 PH (STANDARD UNITS)	10/07/74-07/15/96	5	7.7	7.56	7.9	7.	0.158	0.397	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	5	7.7	7.408	7.9	7.	0.187	0.432	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	5	0.02	0.039	0.1	0.013	0.001	0.037	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	5	8.	11.	27.	4.	83.5	9.138	**	**	**	**
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	5	4.	3.	5.	0.	4.	2.	**	**	**	**
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	5	3.	4.1	9.	0.5	11.55	3.399	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	5 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	5	0.01	0.008	0.01	0.005	0.	0.003	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	5	0.3	0.29	0.5	0.05	0.031	0.175	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	5	9.	9.	12.	4.	9.5	3.082	**	**	**	**
31616 FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	10/07/74-04/30/96	5	100.	100.	200.	50.	3750.	61.237	**	**	**	**
31616 LOG FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	10/07/74-04/30/96	5	2.	1.94	2.301	1.699	0.063	0.252	**	**	**	**
31616 GM FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	10/07/74-04/30/96	5	2.	1.94	2.301	1.699	0.063	0.252	**	**	**	**
70505 PHOSPHATE,TOTAL,COLORIMETRIC METHOD (MG/L AS P)	10/07/74-06/26/79	5 ##	0.05	0.08	0.2	0.05	0.005	0.067	**	**	**	**
70507 PHOSPHORUS,IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	5	0.04	0.035	0.06	0.005	0.	0.02	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1990 - Station MANA0007

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	1	14.7	14.7	14.7	14.7	0.	0.	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	1	10.	10.	10.	10.	0.	0.	**	**	**	**
00310 BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	1	1.	1.	1.	1.	0.	0.	**	**	**	**
00400 PH (STANDARD UNITS)	10/07/74-07/15/96	1	7.2	7.2	7.2	7.2	0.	0.	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	1	7.2	7.2	7.2	7.2	0.	0.	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	1	0.063	0.063	0.063	0.063	0.	0.	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	1 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	1 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	1 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	1 ##	0.02	0.02	0.02	0.02	0.	0.	**	**	**	**
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	1	0.02	0.02	0.02	0.02	0.	0.	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	1	3.8	3.8	3.8	3.8	0.	0.	**	**	**	**

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### Annual Analysis for 1991 - Station MANA0007

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	3	9.	12.733	24.1	5.1	100.703	10.035	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	3	10.9	9.7	12.2	6.	10.69	3.27	**	**	**	**
00310 BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	4	2.	1.75	2.	1.	0.25	0.5	**	**	**	**

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### Annual Analysis for 1991 - Station MANA0007

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00400	PH (STANDARD UNITS)	10/07/74-07/15/96	2	6.9	6.9	7.2	6.6	0.18	0.424	**	**	**	**
00400	CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	2	6.804	6.804	7.2	6.6	0.199	0.446	**	**	**	**
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	2	0.157	0.157	0.251	0.063	0.018	0.133	**	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	4 ###	5.25	16.75	55.	1.5	662.75	25.744	**	**	**	**
00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	4 ###	1.75	1.75	3.	0.5	1.083	1.041	**	**	**	**
00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	4 ###	4.25	15.5	52.	1.5	598.833	24.471	**	**	**	**
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	4 ###	0.03	0.03	0.04	0.02	0.	0.012	**	**	**	**
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	4 ###	0.008	0.013	0.03	0.005	0.	0.012	**	**	**	**
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	4	0.55	0.55	0.7	0.4	0.017	0.129	**	**	**	**
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	4	4.55	5.225	8.3	3.5	4.489	2.119	**	**	**	**
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	2	1055.	1055.	1700.	410.	832050.	912.168	**	**	**	**
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	2	2.922	2.922	3.23	2.613	0.191	0.437	**	**	**	**
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			834.865								

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### Annual Analysis for 1992 - Station MANA0007

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	4	11.9	13.7	25.2	5.8	67.107	8.192	**	**	**	**
00310	BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	4	1.5	1.5	2.	1.	0.333	0.577	**	**	**	**
00400	PH (STANDARD UNITS)	10/07/74-07/15/96	4	7.25	7.225	7.6	6.8	0.123	0.35	**	**	**	**
00400	CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	4	7.225	7.121	7.6	6.8	0.137	0.37	**	**	**	**
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	4	0.06	0.076	0.158	0.025	0.004	0.06	**	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	4 ###	1.5	1.625	2.	1.5	0.063	0.25	**	**	**	**
00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	4 ###	1.5	1.375	1.5	1.	0.063	0.25	**	**	**	**
00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	3 ###	1.5	1.333	1.5	1.	0.083	0.289	**	**	**	**
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	4 ###	0.02	0.025	0.04	0.02	0.	0.01	**	**	**	**
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	4 ###	0.008	0.013	0.03	0.005	0.	0.012	**	**	**	**
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	4	0.4	0.4	0.5	0.3	0.007	0.082	**	**	**	**
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	4	5.05	5.325	7.3	3.9	2.043	1.429	**	**	**	**
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	3	200.	210.	300.	130.	7300.	85.44	**	**	**	**
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	3	2.301	2.297	2.477	2.114	0.033	0.182	**	**	**	**
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			198.319								
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	2	0.02	0.02	0.03	0.01	0.	0.014	**	**	**	**

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### Annual Analysis for 1993 - Station MANA0007

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	5	9.6	11.46	23.8	1.2	69.038	8.309	**	**	**	**
00310	BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	5	2.	1.8	2.	1.	0.2	0.447	**	**	**	**
00400	PH (STANDARD UNITS)	10/07/74-07/15/96	5	7.2	7.22	7.5	7.	0.032	0.179	**	**	**	**
00400	CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	5	7.2	7.193	7.5	7.	0.033	0.181	**	**	**	**
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	5	0.063	0.064	0.1	0.032	0.001	0.024	**	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	5###	1.5	7.1	19.	1.5	64.925	8.058	**	**	**	**
00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	5###	3.	5.4	17.	1.5	43.175	6.571	**	**	**	**
00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	5###	1.5	5.7	16.	1.5	41.075	6.409	**	**	**	**
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	5###	0.02	0.056	0.13	0.02	0.003	0.051	**	**	**	**
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	5###	0.005	0.009	0.02	0.005	0.	0.007	**	**	**	**
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	5	0.5	0.62	1.2	0.3	0.117	0.342	**	**	**	**
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	5	5.4	6.78	13.8	3.3	16.587	4.073	**	**	**	**
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	4	400.	425.	800.	100.	89166.667	298.608	**	**	**	**
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	4	2.588	2.52	2.903	2.	0.15	0.388	**	**	**	**

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### Annual Analysis for 1993 - Station MANA0007

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			330.975								
70507 PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	5	0.02	0.03	0.07	0.02	0.001	0.022	**	**	**	**

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### Annual Analysis for 1994 - Station MANA0007

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	3	16.5	17.	20.4	14.1	10.11	3.18	**	**	**	**
00310 BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	3	2.	1.8	2.2	1.2	0.28	0.529	**	**	**	**
00400 PH (STANDARD UNITS)	10/07/74-07/15/96	3	7.3	7.3	7.4	7.2	0.01	0.1	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	3	7.3	7.292	7.4	7.2	0.01	0.1	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	3	0.05	0.051	0.063	0.04	0.	0.012	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	3 ##	1.5	5.	12.	1.5	36.75	6.062	**	**	**	**
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	3 ##	1.5	1.667	2.	1.5	0.083	0.289	**	**	**	**
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	3 ##	1.5	4.333	10.	1.5	24.083	4.907	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	3 ##	0.02	0.03	0.05	0.02	0.	0.017	**	**	**	**
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	3	0.02	0.02	0.02	0.02	0.	0.	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	3	0.5	0.567	0.7	0.5	0.013	0.115	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	3	7.1	6.5	7.5	4.9	1.96	1.4	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	3	500.	383.333	600.	50.	85833.333	292.973	**	**	**	**
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	3	2.699	2.392	2.778	1.699	0.362	0.602	**	**	**	**
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			246.621								
70507 PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	3	0.03	0.033	0.05	0.02	0.	0.015	**	**	**	**

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### Annual Analysis for 1995 - Station MANA0007

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	4	14.55	14.8	26.1	4.	84.02	9.166	**	**	**	**
00310 BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	3 ##	0.5	0.9	1.7	0.5	0.48	0.693	**	**	**	**
00400 PH (STANDARD UNITS)	10/07/74-07/15/96	4	7.3	7.3	7.6	7.	0.067	0.258	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	4	7.289	7.244	7.6	7.	0.071	0.266	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	4	0.051	0.057	0.1	0.025	0.001	0.033	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	3 ##	1.5	6.667	17.	1.5	80.083	8.949	**	**	**	**
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	3 ##	1.5	1.5	1.5	1.5	0.	0.	**	**	**	**
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	3 ##	1.5	6.	15.	1.5	60.75	7.794	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	4 ##	0.03	0.035	0.06	0.02	0.	0.019	**	**	**	**
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	4	0.02	0.024	0.05	0.005	0.	0.021	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	4	0.35	0.375	0.5	0.3	0.009	0.096	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	3	6.2	6.033	6.9	5.	0.923	0.961	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	4	350.	712.5	2100.	50.	877291.667	936.638	**	**	**	**
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	4	2.54	2.525	3.322	1.699	0.442	0.665	**	**	**	**
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			335.037								
70507 PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	4	0.03	0.034	0.07	0.005	0.001	0.028	**	**	**	**

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### Annual Analysis for 1996 - Station MANA0007

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	3	19.	15.4	24.6	2.6	130.72	11.433	**	**	**	**
00310 BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	3 ##	0.5	1.	2.	0.5	0.75	0.866	**	**	**	**
00400 PH (STANDARD UNITS)	10/07/74-07/15/96	3	7.2	7.067	7.4	6.6	0.173	0.416	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	3	7.2	6.928	7.4	6.6	0.202	0.45	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	3	0.063	0.118	0.251	0.04	0.013	0.116	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	3	4.	5.	7.	4.	3.	1.732	**	**	**	**
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	3 ##	1.5	1.5	1.5	1.5	0.	0.	**	**	**	**
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	3	4.	4.333	6.	3.	2.333	1.528	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	3	0.06	0.06	0.08	0.04	0.	0.02	**	**	**	**
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	3	0.01	0.012	0.02	0.005	0.	0.008	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	3	0.4	0.467	0.6	0.4	0.013	0.115	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	3	5.6	5.533	6.2	4.8	0.493	0.702	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	2 ##	525.	525.	1000.	50.	451250.	671.751	**	**	**	**
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	2 ##	2.349	2.349	3.	1.699	0.846	0.92	**	**	**	**
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			223.607								
70507 PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	3	0.03	0.03	0.05	0.01	0.	0.02	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0007

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	32	6.05	6.5	16.5	0.	22.427	4.736	0.29	2.3	10.275	13.53
00300p	OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	23	11.4	10.726	13.7	6.2	4.477	2.116	6.8	9.4	11.9	13.48
00310p	BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	32	2.	2.2	5.	0.5	1.003	1.002	1.	1.775	3.	3.7
00400p	PH (STANDARD UNITS)	10/07/74-07/15/96	33	7.3	7.233	7.8	6.	0.139	0.372	6.68	7.	7.5	7.72
00400p	CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	33	7.3	7.013	7.8	6.	0.189	0.434	6.68	7.	7.5	7.72
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	33	0.05	0.097	1.	0.016	0.029	0.172	0.02	0.032	0.1	0.214
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	29	6.	22.362	210.	0.5	2312.087	48.084	0.5	1.5	18.	55.
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	29	2.	4.052	20.	0.	29.595	5.44	0.	1.5	5.	14.
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	28	5.	22.857	290.	0.	3553.275	59.609	0.5	1.5	13.5	61.6
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	32	0.095	0.487	3.399	0.02	0.551	0.742	0.02	0.043	0.8	1.569
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	32	0.02	0.04	0.24	0.005	0.003	0.058	0.005	0.005	0.045	0.144
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	20	0.69	0.875	2.019	0.26	0.231	0.48	0.354	0.51	1.282	1.589
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	32	0.8	0.95	4.199	0.3	0.574	0.757	0.33	0.5	1.15	1.809
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	31	8.	8.365	19.	3.3	15.468	3.933	3.98	5.	10.	13.64
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	29 ##	50.	380.345	4900.	40.	921624.877	960.013	50.	50.	300.	800.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	29 ##	1.699	2.053	3.69	1.602	0.314	0.561	1.699	1.699	2.477	2.903
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			113.013								
70507p	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	28	0.055	0.688	17.	0.005	10.241	3.2	0.005	0.023	0.087	0.26

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0007

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	26	16.75	16.508	26.	3.5	39.715	6.302	7.76	11.9	22.2	25.
00300p	OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	20	7.9	7.725	11.2	3.4	6.81	2.61	4.02	5.175	9.975	11.08
00310p	BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	26	2.	2.615	7.	0.5	2.546	1.596	0.85	2.	3.25	5.3
00400p	PH (STANDARD UNITS)	10/07/74-07/15/96	25	7.4	7.38	7.9	6.2	0.134	0.366	7.	7.2	7.65	7.84
00400p	CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	25	7.4	7.164	7.9	6.2	0.183	0.427	7.	7.2	7.65	7.84
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	25	0.04	0.069	0.631	0.013	0.015	0.121	0.015	0.023	0.063	0.1
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	26	6.	8.192	27.	1.5	38.622	6.215	1.85	3.75	12.	17.9
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	26	2.	3.077	17.	0.	11.734	3.425	0.	1.	4.	6.
00540p	RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	26	3.5	5.096	20.	0.	23.06	4.802	0.35	1.5	7.	11.8
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	26	0.2	0.669	4.599	0.02	1.047	1.023	0.02	0.048	1.124	1.849
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	26	0.075	0.08	0.26	0.005	0.006	0.076	0.005	0.01	0.133	0.193
00620p	NITRATE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	13	0.53	0.512	0.94	0.22	0.054	0.233	0.224	0.29	0.655	0.912
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	25	0.7	1.114	4.799	0.05	1.153	1.074	0.26	0.4	1.699	2.639
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	25	9.	9.74	18.	1.	16.338	4.042	4.54	7.2	13.	15.4
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	25	100.	298.8	2300.	50.	231369.333	481.009	50.	50.	355.	850.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	25	2.	2.171	3.362	1.699	0.232	0.482	1.699	1.699	2.545	2.925
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			148.155								
70507p	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	24	0.105	0.141	0.6	0.005	0.021	0.146	0.015	0.033	0.183	0.385

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0007

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/07/74-07/15/96	17	23.8	21.253	26.1	2.7	34.304	5.857	12.3	18.9	24.9	26.02
00300p	OXYGEN, DISSOLVED MG/L	10/07/74-07/17/91	12	6.	6.167	10.	3.	4.402	2.098	3.06	4.75	7.675	9.61
00310p	BOD, 5 DAY, 20 DEG C MG/L	10/07/74-07/15/96	16	2.	2.794	14.	0.5	10.121	3.181	0.85	1.	3.	7.
00400p	PH (STANDARD UNITS)	10/07/74-07/15/96	17	7.3	7.353	7.9	7.	0.056	0.237	7.08	7.2	7.55	7.74
00400p	CONVERTED PH (STANDARD UNITS)	10/07/74-07/15/96	17	7.3	7.3	7.9	7.	0.059	0.244	7.08	7.2	7.55	7.74
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/07/74-07/15/96	17	0.05	0.05	0.1	0.013	0.001	0.023	0.018	0.028	0.063	0.084
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-07/15/96	14	3.5	14.5	128.	0.5	1114.769	33.388	0.5	1.5	14.	74.5

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

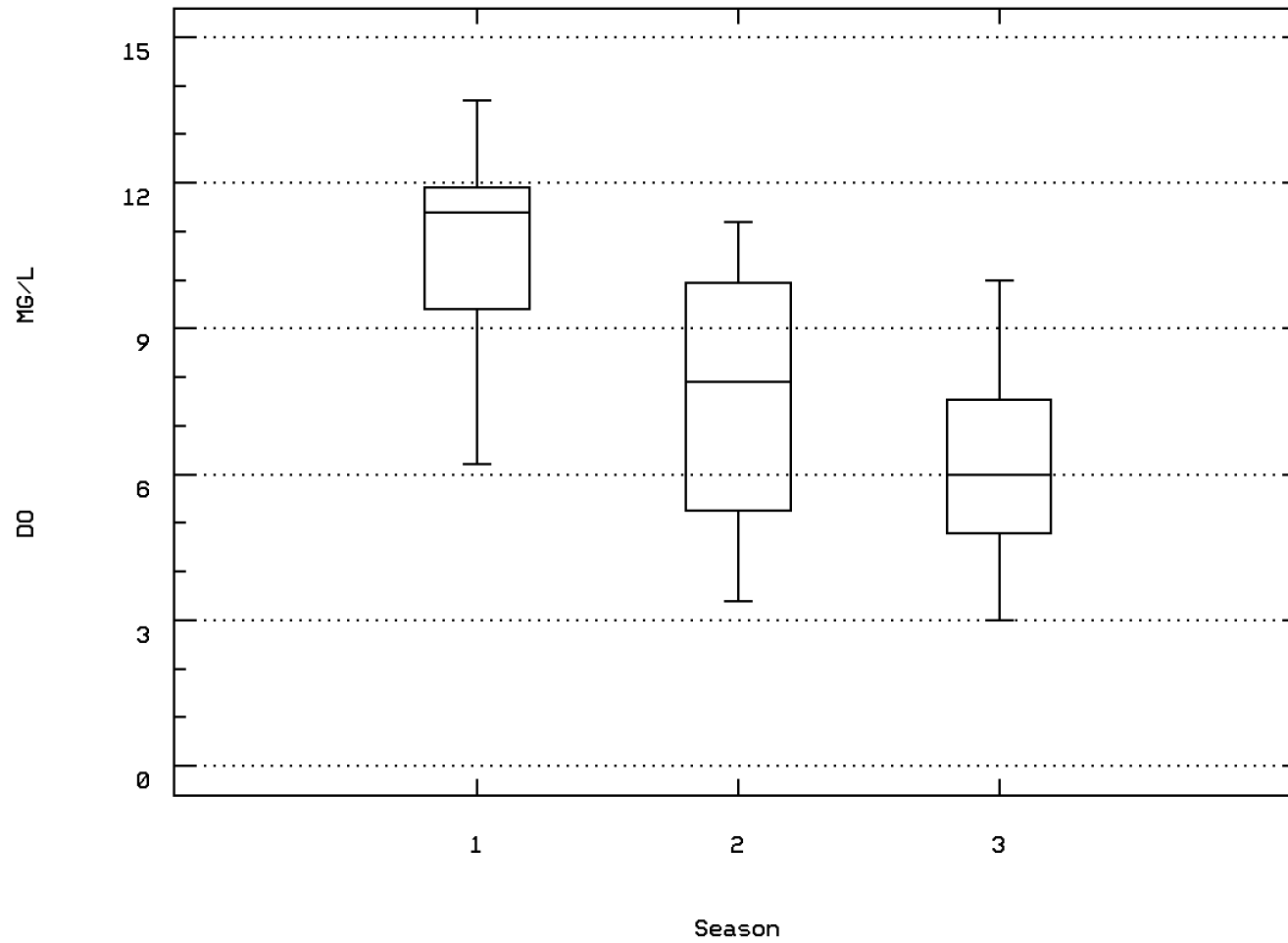
### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0007

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00535p RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-07/15/96	14 ##	1.75	3.036	14.	0.5	13.979	3.739	0.5	1.25	2.75	11.
00540p RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-07/15/96	14	1.75	12.	120.	0.5	985.423	31.391	0.5	1.375	7.	68.
00610p NITROGEN, AMMONIA, TOTAL (MG/L AS N)	10/07/74-07/15/96	17	0.1	1.032	5.	0.02	2.797	1.672	0.02	0.045	2.1	3.879
00615p NITRITE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	17	0.02	0.102	0.48	0.001	0.022	0.15	0.004	0.005	0.165	0.424
00620p NITRATE NITROGEN, TOTAL (MG/L AS N)	10/07/74-07/15/96	13	0.57	0.648	1.519	0.09	0.18	0.424	0.138	0.265	0.835	1.455
00625p NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	10/07/74-07/15/96	17	0.5	1.547	6.299	0.3	3.737	1.933	0.3	0.4	2.699	5.26
00680p CARBON, TOTAL ORGANIC (MG/L AS C)	12/04/74-07/15/96	16	9.5	9.456	16.	3.8	12.793	3.577	4.5	6.425	11.75	14.6
31616p FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	14 ##	75.	264.286	1700.	50.	201703.297	449.114	50.	50.	275.	1150.
31616p LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	10/07/74-04/30/96	14 ##	1.849	2.077	3.23	1.699	0.252	0.502	1.699	1.699	2.401	3.004
31616p GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			119.389								
70507p PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10/07/74-07/15/96	14	0.055	0.123	0.36	0.02	0.014	0.118	0.02	0.03	0.228	0.32

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0007 Parameter Code: 00300

OXYGEN, DISSOLVED

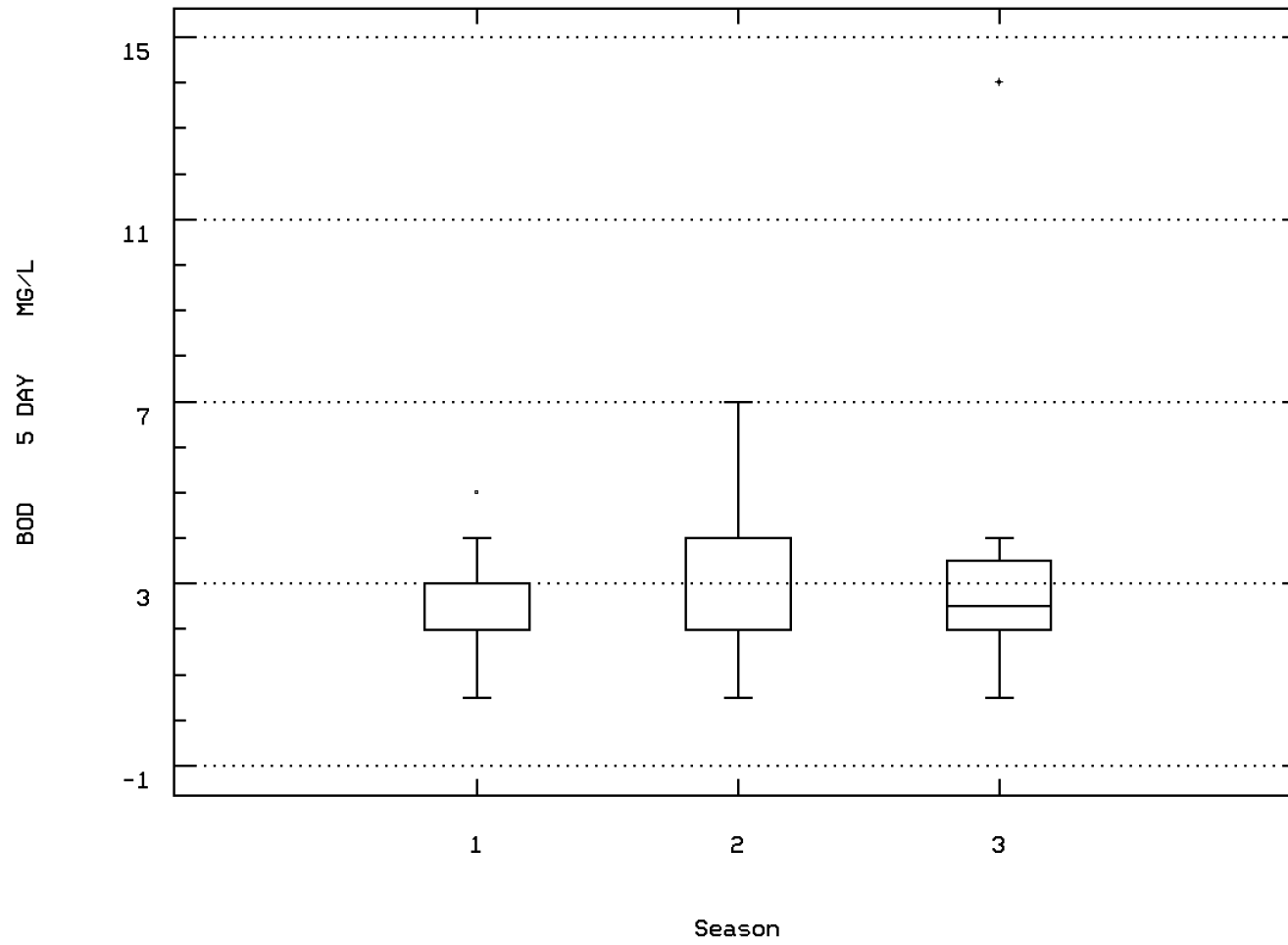


RT. 29/211 BRIDGE



Station: MANA0007 Parameter Code: 00310

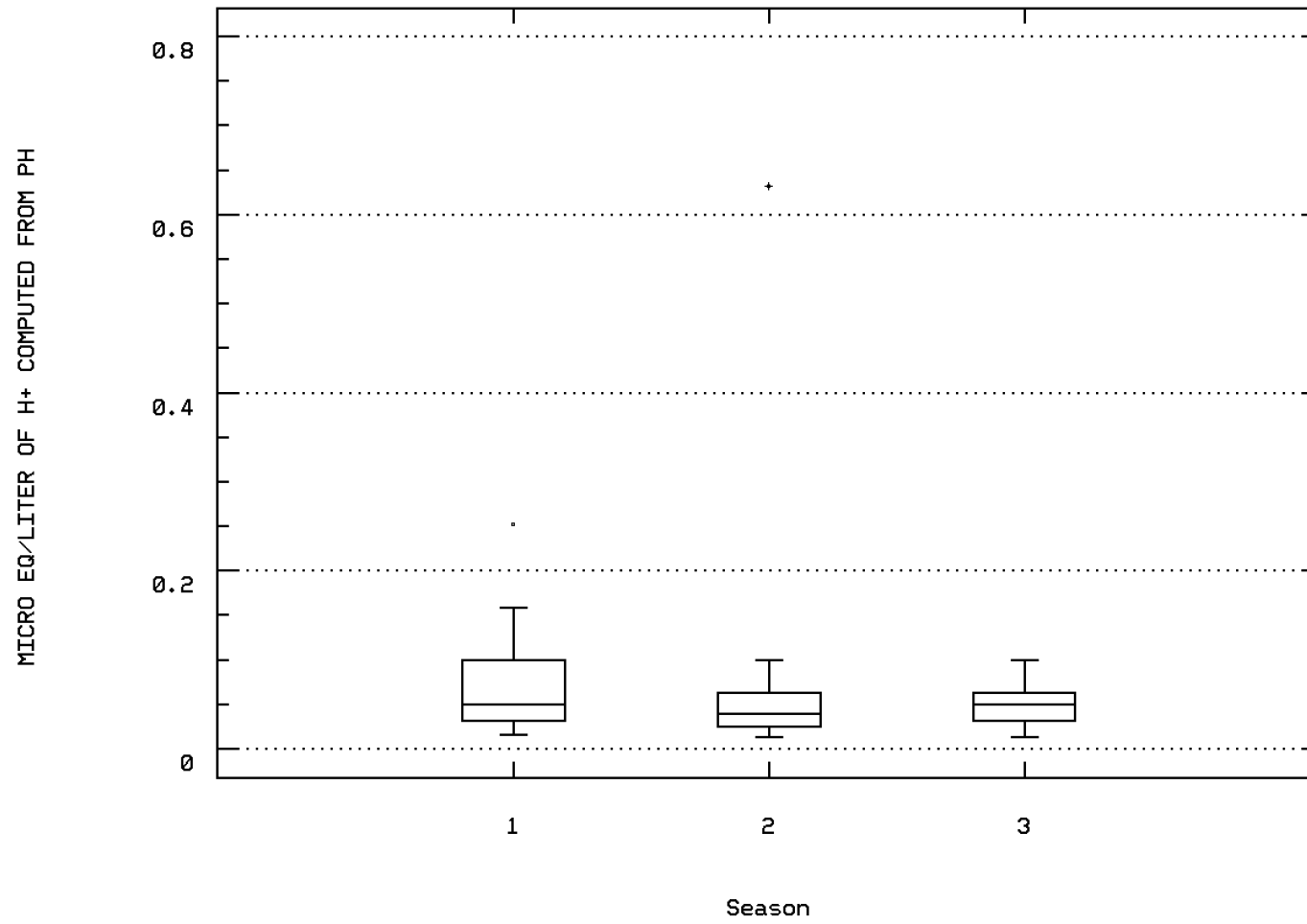
BOD, 5 DAY, 20 DEG C



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00400

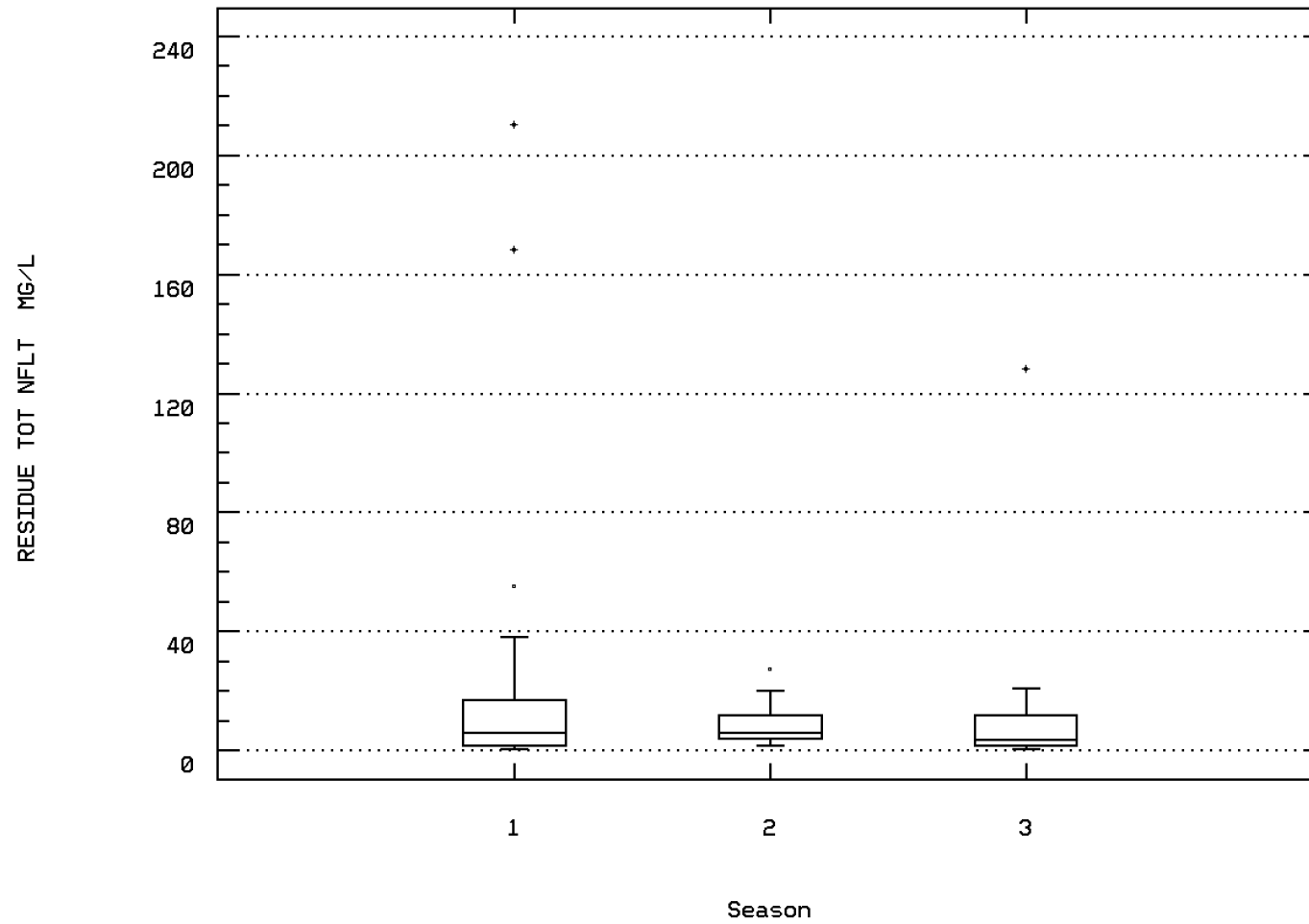
MICRO EQ/LITER OF H+ COMPUTED FROM PH



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00530

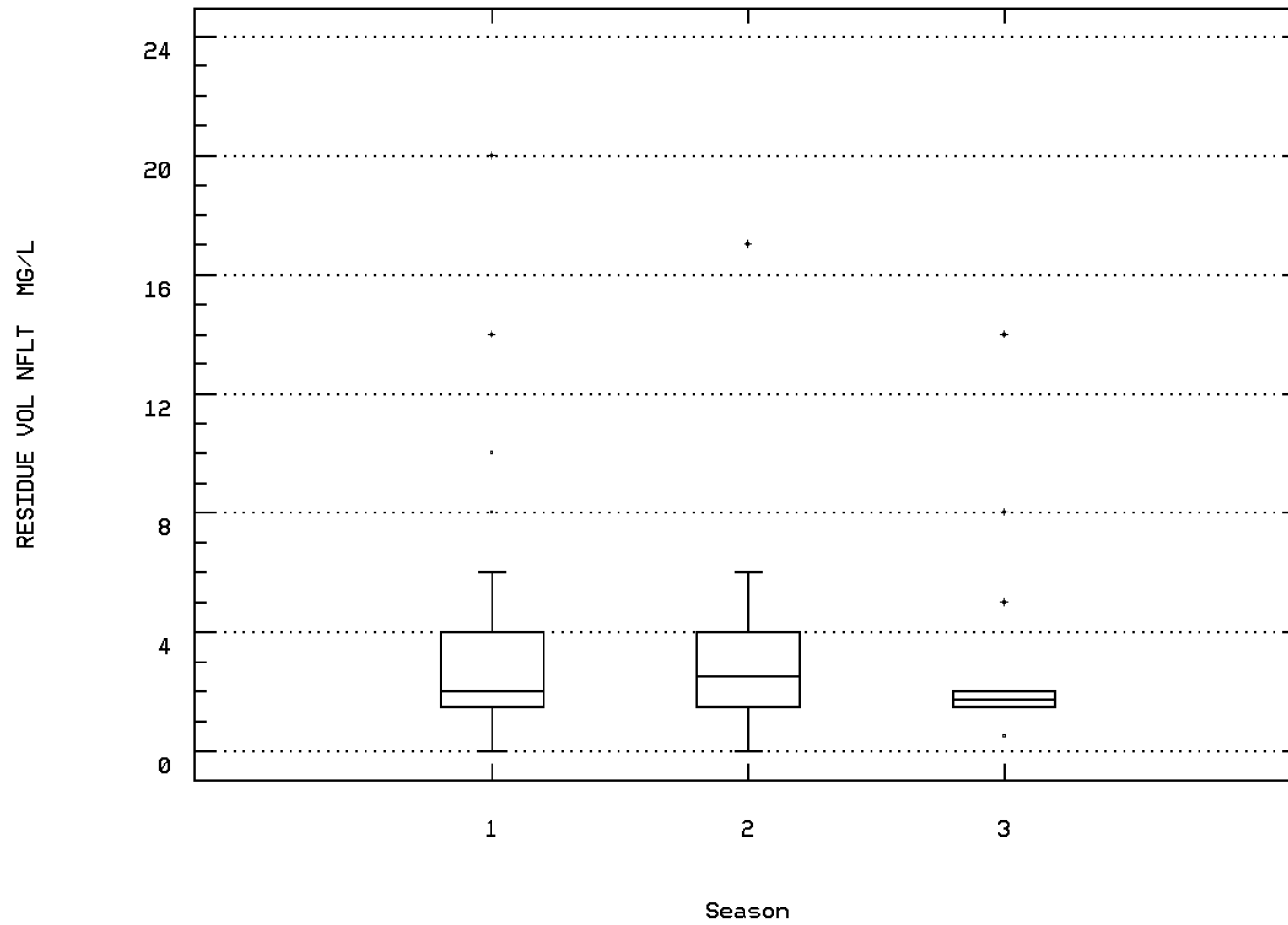
RESIDUE, TOTAL NONFILTRABLE (MG/L)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00535

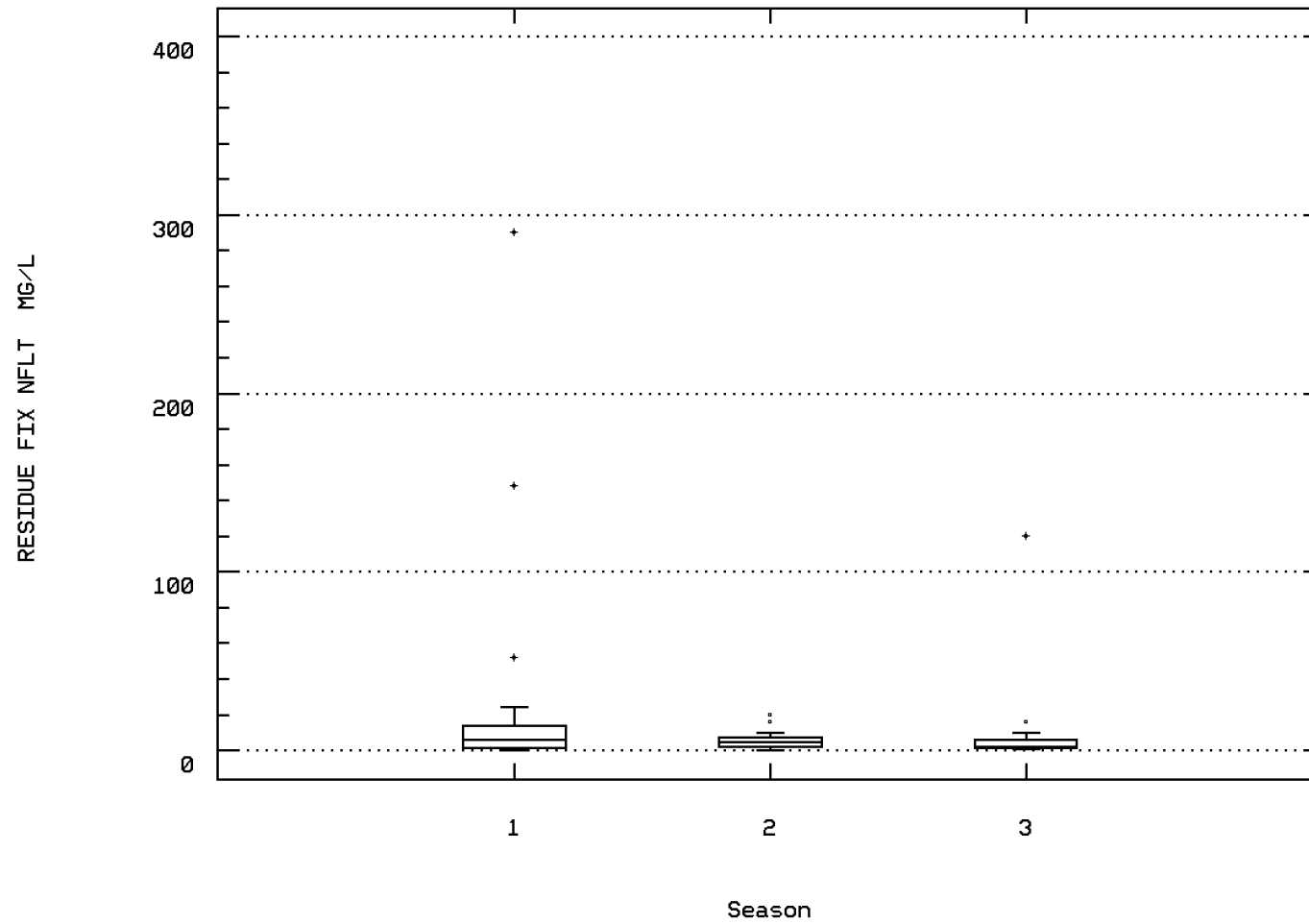
RESIDUE, VOLATILE NONFILTRABLE (MG/L)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00540

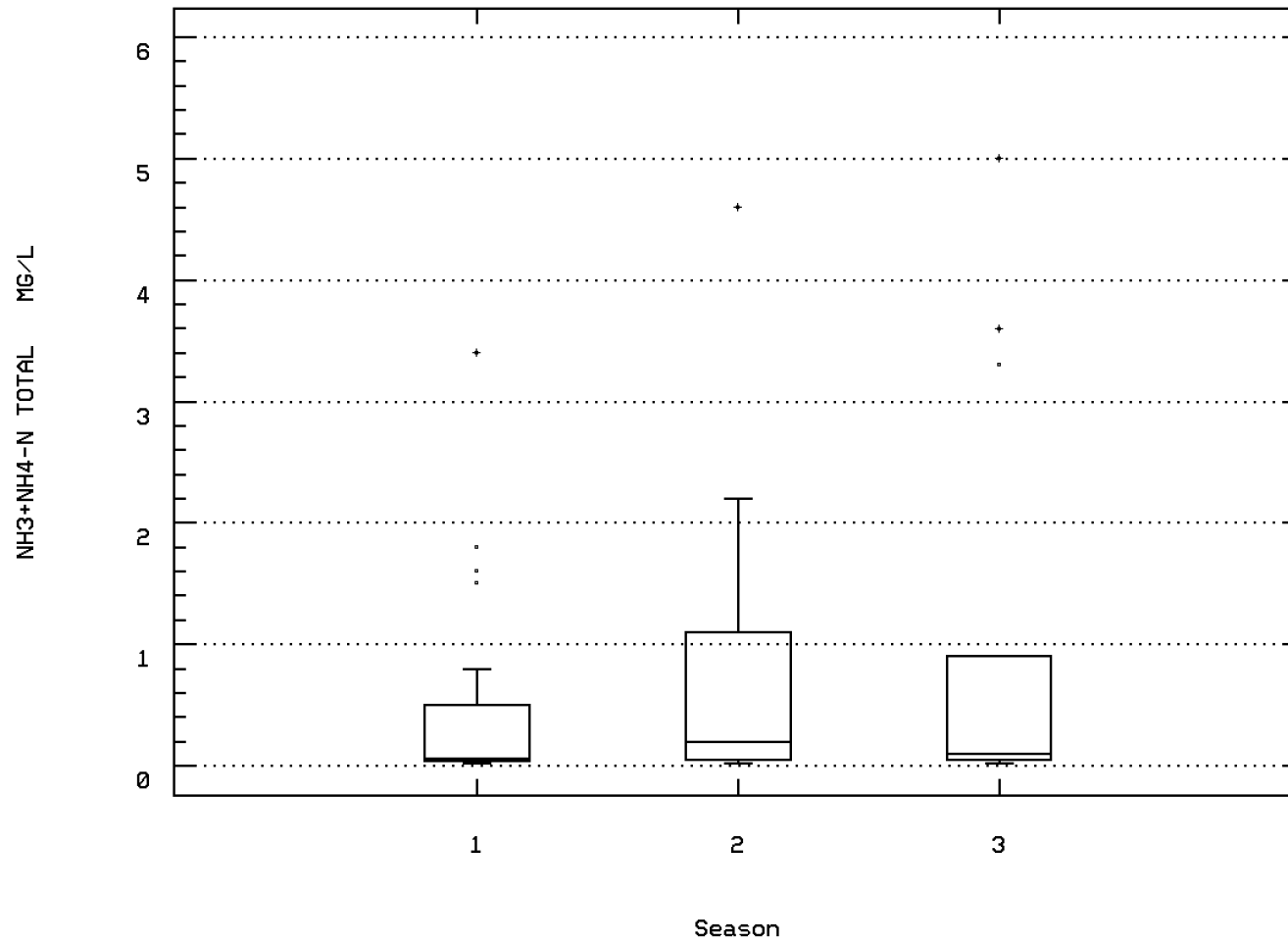
RESIDUE, FIXED NONFILTRABLE (MG/L)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00610

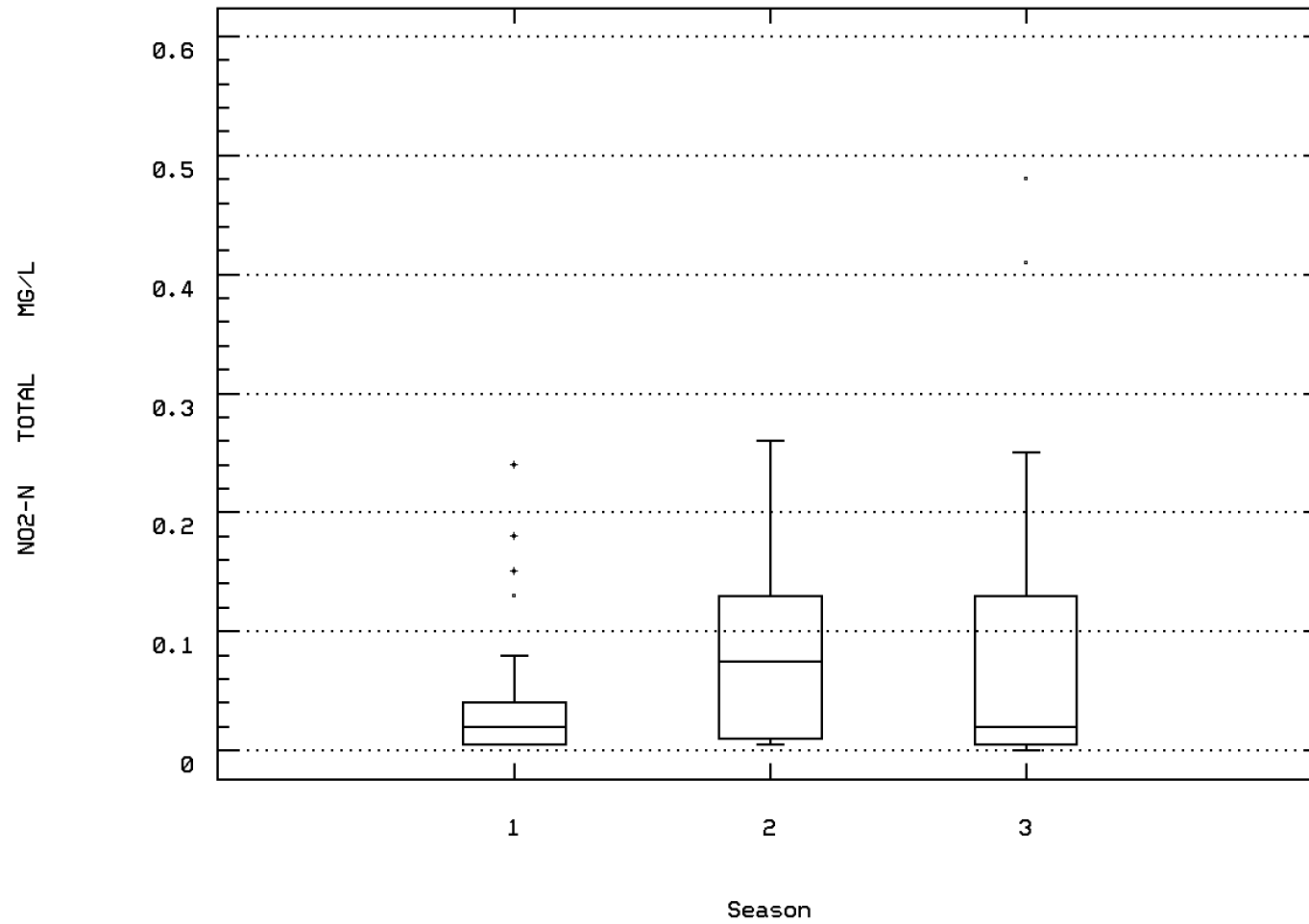
NITROGEN, AMMONIA, TOTAL (MG/L AS N)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00615

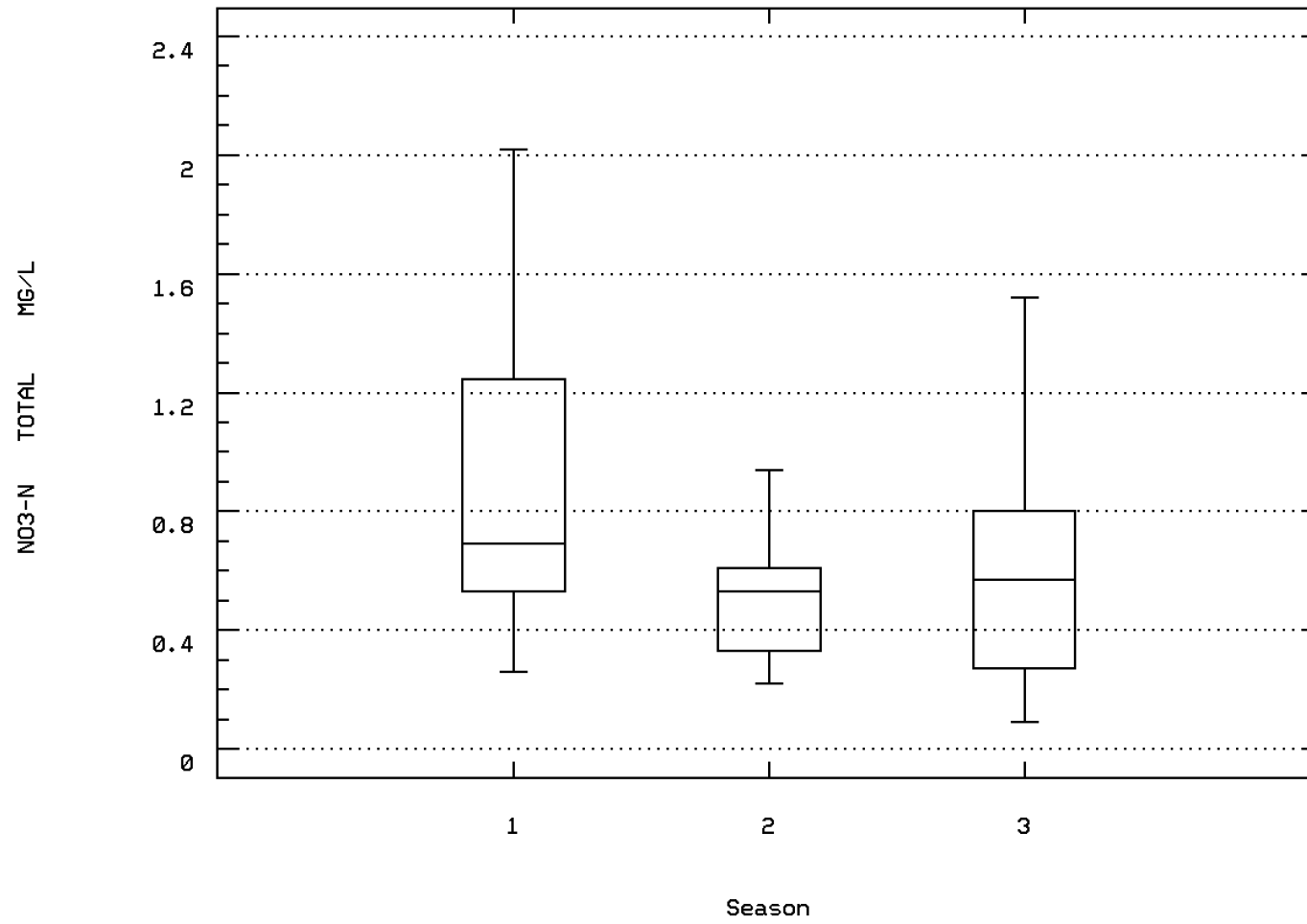
NITRITE NITROGEN, TOTAL (MG/L AS N)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00620

NITRATE NITROGEN, TOTAL (MG/L AS N)

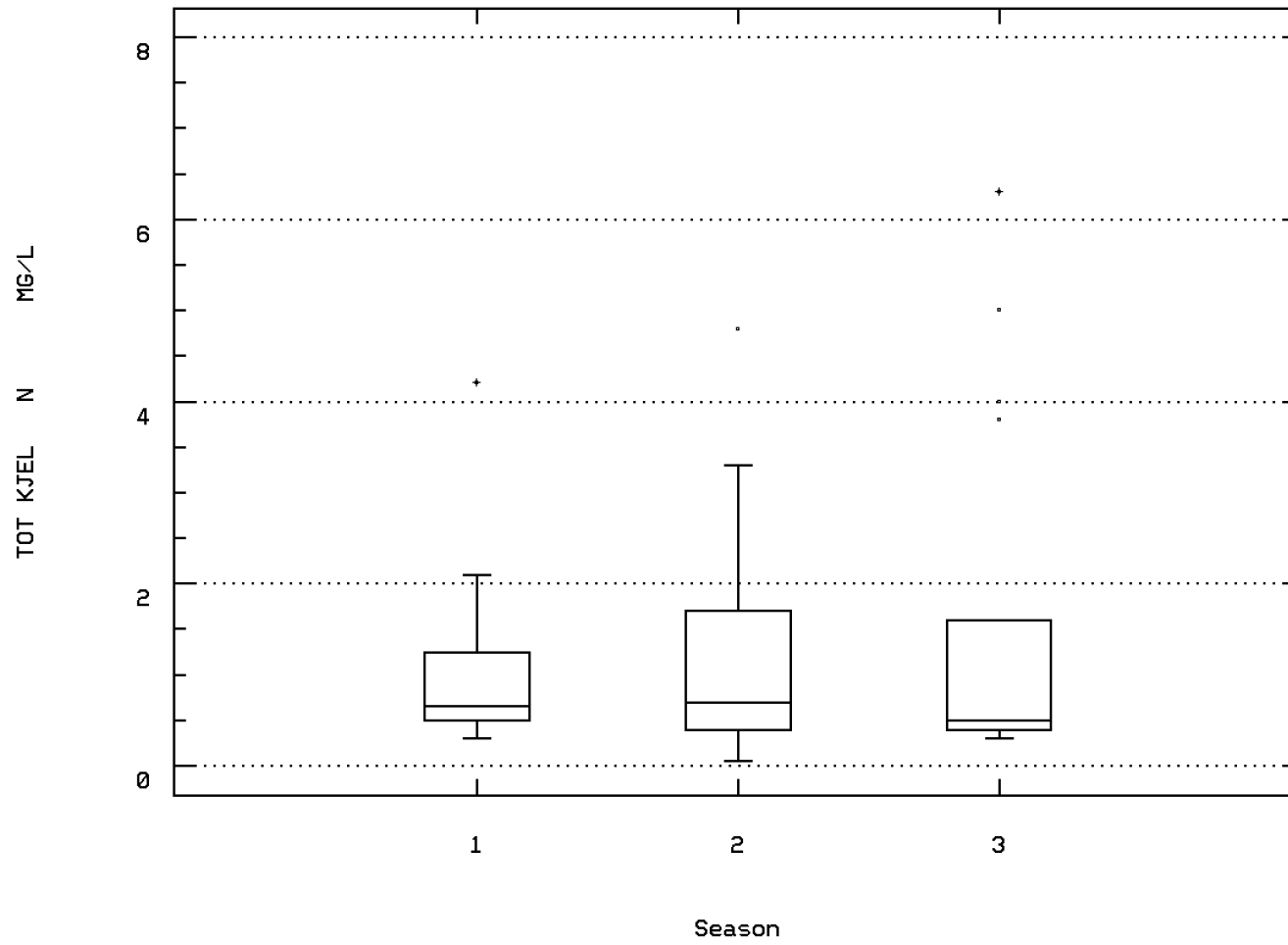


RT. 29/211 BRIDGE



Station: MANA0007 Parameter Code: 00625

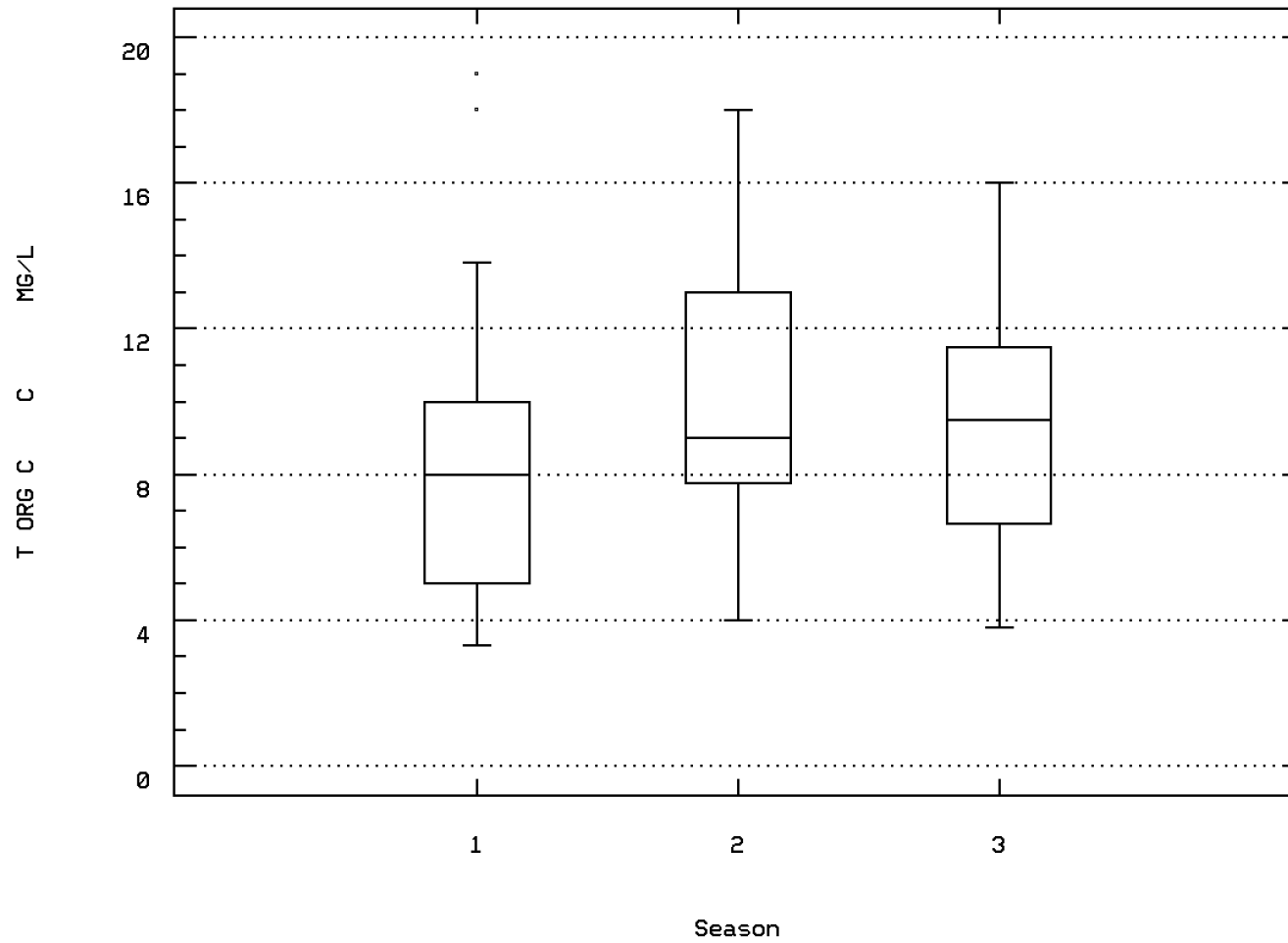
NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 00680

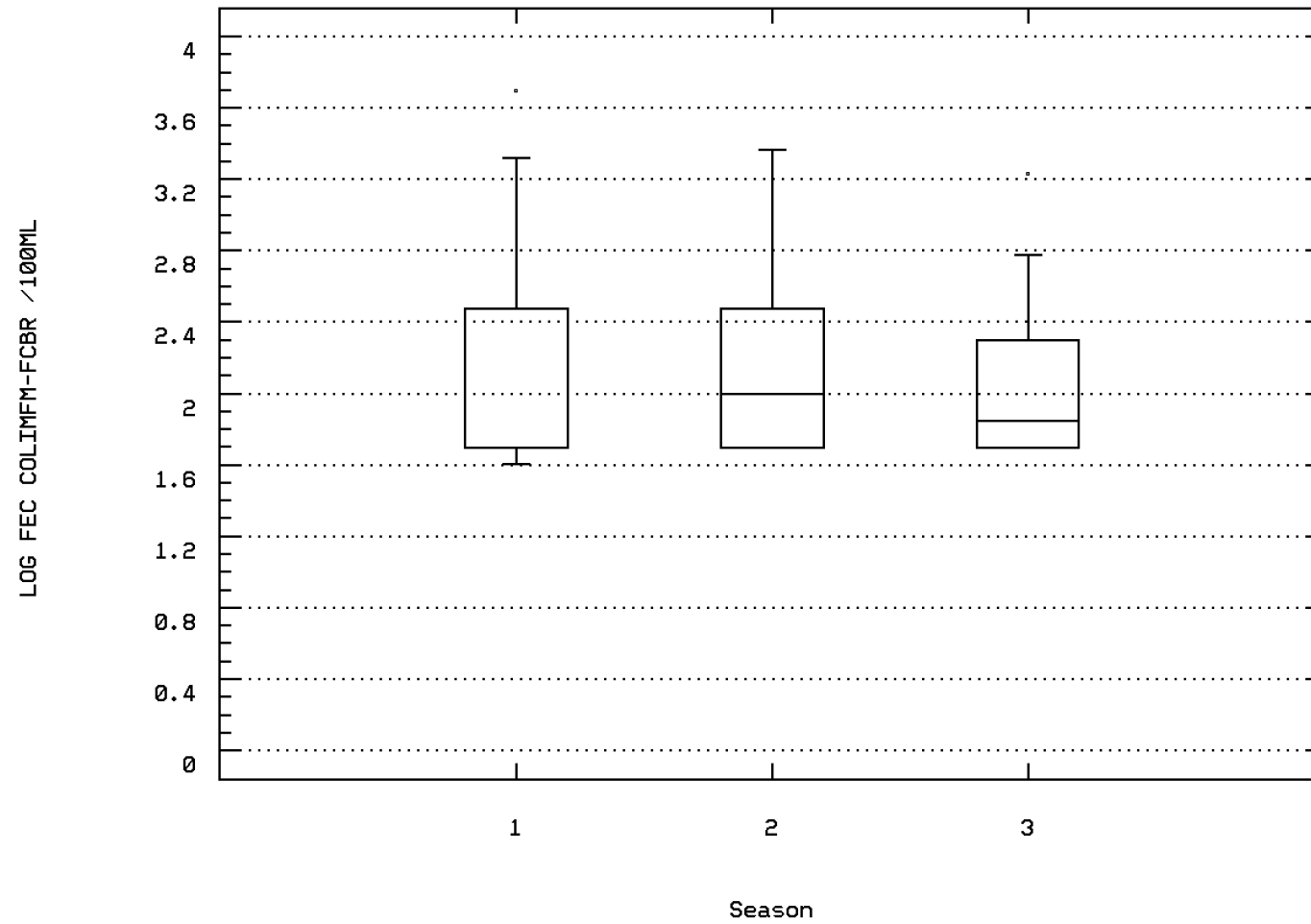
CARBON, TOTAL ORGANIC (MG/L AS C)



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 31616

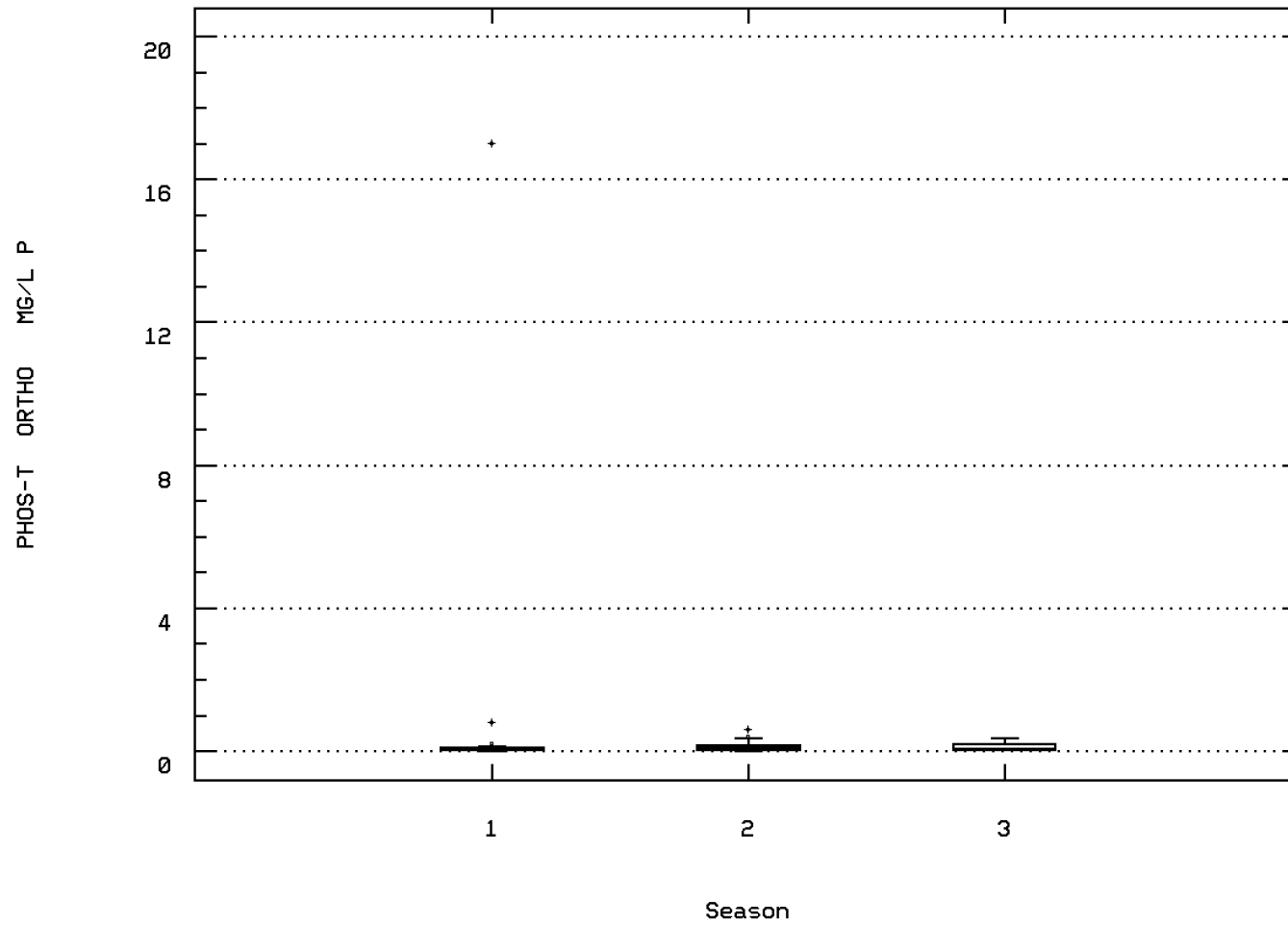
LOG FECAL COLIFORM, MEMBR FILTER, M-FC BR



RT. 29/211 BRIDGE

Station: MANA0007 Parameter Code: 70507

PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/



RT. 29/211 BRIDGE

## Station Inventory for Station: MANA0008

NPS Station ID: MANA0008  
 Location: CUB RUN BELOW MIDDLE CUB STP  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes: 0214001 002190 00800 0360  
 RMI-Miles: 0081.60 0016.90 011.20 004.10  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC R BASIN  
 RF1 Index: 02070010053  
 RF3 Index: 02070010008302.76  
 Description:

LAT/LON: 38.840005/ -77.463892

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 4.170  
 RF3 Mile Point: 3.41

Agency: 31POTOMA  
 FIPS State/County: 51059 VIRGINIA/FAIRFAX  
 STORET Station ID(s): 101070 /SITE 31  
 Within Park Boundary: No

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.04

Date Created: / /

On/Off RF1: OFF  
 On/Off RF3:

## Parameter Inventory for Station: MANA0008

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/21/73-11/21/73	4	7.5	10.75	25.	3.	96.25	9.811	**	**	**	**
00075 TURBIDITY, HELLIGE (PPM AS SILICON DIOXIDE)	02/21/73-11/21/73	4	8.	8.125	13.	3.5	17.729	4.211	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	02/21/73-11/21/73	4	7.05	6.575	10.	2.2	11.323	3.365	**	**	**	**
00310 BOD, 5 DAY, 20 DEG C MG/L	02/21/73-11/21/73	5	2.5	3.72	7.	1.4	7.177	2.679	**	**	**	**
00400 PH (STANDARD UNITS)	02/21/73-11/21/73	4	7.3	7.15	7.4	6.6	0.137	0.37	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	02/21/73-11/21/73	4	7.3	7.01	7.4	6.6	0.163	0.404	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/21/73-11/21/73	4	0.05	0.098	0.251	0.04	0.01	0.102	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/21/73-11/21/73	5	6.	6.8	16.	2.	30.7	5.541	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/21/73-03/22/73	2	0.9	0.9	1.	0.8	0.02	0.141	**	**	**	**
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	02/21/73-03/22/73	2	0.	0.	0.	0.	0.	0.	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	02/21/73-03/22/73	2	1.35	1.35	1.4	1.3	0.005	0.071	**	**	**	**
00650 PHOSPHATE, TOTAL (MG/L AS PO4)	02/21/73-03/22/73	2	0.24	0.24	0.24	0.24	0.	0.	**	**	**	**
00666 PHOSPHORUS, DISSOLVED (MG/L AS P)	05/18/73-11/21/73	3	1.44	1.267	1.92	0.44	0.57	0.755	**	**	**	**
31615 FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	02/21/73-11/21/73	5	0.	195.	515.	0.	71675.	267.722	**	**	**	**
31615 LOG FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	02/21/73-11/21/73	5	0.	1.075	2.712	0.	2.167	1.472	**	**	**	**
31615 GM FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	GEOMETRIC MEAN =			11.883								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

## EPA Water Quality Criteria Analysis for Station: MANA0008

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	4	1	0.25	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00400 PH	Other-Hi Lim.	9.	4	0	0.00	2	0	0.00	2	0	0.50						
	Other-Lo Lim.	6.5	4	0	0.00	2	0	0.00	2	0	0.00						
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	2	0	0.00	1	0	0.00	1	0	0.00						
31615 FECAL COLIFORM, MPN	Other-Hi Lim.	200.	5	2	0.40	2	1	0.50	3	1	0.33						

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0009

NPS Station ID: MANA0009

Location: CUB RUN NEAR CENTREVILLE, VA

Station Type: /TYPA/AMBNT/STREAM

RMI-Indexes:

RMI-Miles:

HUC: 02070010

Major Basin:

Minor Basin:

RF1 Index: 02070010

RF3 Index: 02070010050900.00

Description:

LAT/LON: 38.833059/ -77.463892

Depth of Water: 0

Elevation: 0

RF1 Mile Point: 0.000

RF3 Mile Point: 2.59

Agency: 112WRD

FIPS State/County: 51059 VIRGINIA/FAIRFAX

STORET Station ID(s): 01656940

Within Park Boundary: No

Aquifer:

Water Body Id:

ECO Region:

Distance from RF1: 6.70

Distance from RF3: 0.02

Date Created: 12/29/77

On/Off RF1:

On/Off RF3:

## Parameter Inventory for Station: MANA0009

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/30/77-08/30/77	1	22.	22.	22.	22.	0.	0.	**	**	**
00061	FLOW, STREAM, INSTANTANEOUS CFS	08/30/77-08/30/77	1	2.	2.	2.	2.	0.	0.	**	**	**
00080	COLOR (PLATINUM-COBALT UNITS)	08/30/77-08/30/77	1	25.	25.	25.	25.	0.	0.	**	**	**
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/30/77-08/30/77	1	355.	355.	355.	355.	0.	0.	**	**	**
00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	08/30/77-08/30/77	1	28.	28.	28.	28.	0.	0.	**	**	**
00440	BICARBONATE ION (MG/L AS HCO3)	08/30/77-08/30/77	1	34.	34.	34.	34.	0.	0.	**	**	**
00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/30/77-08/30/77	1	0.19	0.19	0.19	0.19	0.	0.	**	**	**
00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/30/77-08/30/77	1	0.53	0.53	0.53	0.53	0.	0.	**	**	**
00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/30/77-08/30/77	1	0.7	0.7	0.7	0.7	0.	0.	**	**	**
00660	PHOSPHATE, ORTHO (MG/L AS PO4)	08/30/77-08/30/77	1	0.64	0.64	0.64	0.64	0.	0.	**	**	**
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/30/77-08/30/77	1	0.21	0.21	0.21	0.21	0.	0.	**	**	**
00900	HARDNESS, TOTAL (MG/L AS CaCO3)	08/30/77-08/30/77	1	94.	94.	94.	94.	0.	0.	**	**	**
00902	HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/30/77-08/30/77	1	66.	66.	66.	66.	0.	0.	**	**	**
00915	CALCIUM, DISSOLVED (MG/L AS Ca)	08/30/77-08/30/77	1	27.	27.	27.	27.	0.	0.	**	**	**
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	08/30/77-08/30/77	1	6.4	6.4	6.4	6.4	0.	0.	**	**	**
00930	SODIUM, DISSOLVED (MG/L AS Na)	08/30/77-08/30/77	1	22.	22.	22.	22.	0.	0.	**	**	**
00931	SODIUM ADSORPTION RATIO	08/30/77-08/30/77	1	1.	1.	1.	1.	0.	0.	**	**	**
00932	SODIUM, PERCENT	08/30/77-08/30/77	1	32.	32.	32.	32.	0.	0.	**	**	**
00935	POTASSIUM, DISSOLVED (MG/L AS K)	08/30/77-08/30/77	1	7.	7.	7.	7.	0.	0.	**	**	**
00940	CHLORIDE, TOTAL IN WATER MG/L	08/30/77-08/30/77	1	50.	50.	50.	50.	0.	0.	**	**	**
00945	SULFATE, TOTAL (MG/L AS SO4)	08/30/77-08/30/77	1	29.	29.	29.	29.	0.	0.	**	**	**
00950	FLUORIDE, DISSOLVED (MG/L AS F)	08/30/77-08/30/77	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**
00955	SILICA, DISSOLVED (MG/L AS SiO2)	08/30/77-08/30/77	1	8.8	8.8	8.8	8.8	0.	0.	**	**	**
01008	BARIUM IN BOTTOM DEPOSITS (MG/KG AS Ba DRY WGT)	08/30/77-08/30/77	1	20.	20.	20.	20.	0.	0.	**	**	**
01028	CADMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	08/30/77-08/30/77	1	10.	10.	10.	10.	0.	0.	**	**	**
01029	CHROMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	08/30/77-08/30/77	1	40.	40.	40.	40.	0.	0.	**	**	**
01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS Cu DRY WGT)	08/30/77-08/30/77	1	20.	20.	20.	20.	0.	0.	**	**	**
01046	IRON, DISSOLVED (UG/L AS Fe)	08/30/77-08/30/77	1	100.	100.	100.	100.	0.	0.	**	**	**
01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS Pb DRY WGT)	08/30/77-08/30/77	1	20.	20.	20.	20.	0.	0.	**	**	**
01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS Zn DRY WGT)	08/30/77-08/30/77	1	80.	80.	80.	80.	0.	0.	**	**	**
39333	ALDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	08/30/77-08/30/77	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**
39343	GAMMA-BHC(LINDANE), SEDIMENTS, DRY WGT, UG/KG	08/30/77-08/30/77	1	0.	0.	0.	0.	0.	0.	**	**	**
39351	CHLORDANE(TECH MIX&METABS), SEDIMENTS, DRY WGT, UG/KG	08/30/77-08/30/77	1	0.	0.	0.	0.	0.	0.	**	**	**
39363	DDD IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	08/30/77-08/30/77	1	0.	0.	0.	0.	0.	0.	**	**	**
39368	DDE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	08/30/77-08/30/77	1	0.	0.	0.	0.	0.	0.	**	**	**
39373	DDT IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	08/30/77-08/30/77	1	3.	3.	3.	3.	0.	0.	**	**	**
39383	DIELDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	08/30/77-08/30/77	1	1.1	1.1	1.1	1.1	0.	0.	**	**	**
39393	ENDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	08/30/77-08/30/77	1	0.	0.	0.	0.	0.	0.	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0009

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
39403	TOXAPHENE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	08/30/77-08/30/77	1	0.	0.	0.	0.	0.	0.	**	**	**
39413	HEPTACHLOR IN BOT. DEP. (UG/KILOGRAM DRY SOLIDS)	08/30/77-08/30/77	1	0.2	0.2	0.2	0.	0.	0.	**	**	**
39423	HEPTACHLOR EPOXIDE IN BOT. DEP. (UG/KG DRY SOL.)	08/30/77-08/30/77	1	0.4	0.4	0.4	0.	0.	0.	**	**	**
39519	PCBS IN BOTTOM DEPOSITS (UG/KG DRY SOLIDS)	08/30/77-08/30/77	1	31.	31.	31.	0.	0.	0.	**	**	**
70300	RESIDUE,TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/30/77-08/30/77	1	238.	238.	238.	0.	0.	0.	**	**	**
70301	SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/30/77-08/30/77	1	171.	171.	171.	0.	0.	0.	**	**	**
70302	SOLIDS, DISSOLVED-TONS PER DAY	08/30/77-08/30/77	1	1.31	1.31	1.31	0.	0.	0.	**	**	**
70303	SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/30/77-08/30/77	1	0.32	0.32	0.32	0.	0.	0.	**	**	**
71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/30/77-08/30/77	1	2.3	2.3	2.3	0.	0.	0.	**	**	**
71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/30/77-08/30/77	1	0.62	0.62	0.62	0.	0.	0.	**	**	**
71921	MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	08/30/77-08/30/77	1	0.	0.	0.	0.	0.	0.	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0009

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00613	NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	1	0	0.00						1	0	0.00			
00618	NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	1	0	0.00						1	0	0.00			
00631	NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	1	0	0.00						1	0	0.00			
00940	CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	1	0	0.00						1	0	0.00			
		Drinking Water	250.	1	0	0.00						1	0	0.00			
00945	SULFATE, TOTAL (AS SO4)	Drinking Water	250.	1	0	0.00						1	0	0.00			
00950	FLUORIDE, DISSOLVED AS F	Drinking Water	4.	1	0	0.00						1	0	0.00			
71851	NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	1	0	0.00						1	0	0.00			
71856	NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	1	0	0.00						1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0010

NPS Station ID: MANA0010  
 Location: CUB RUN 29 & 211  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes: 0214001 002190 00800 0360  
 RMI-Miles: 0081.60 0016.90 011.20 003.90  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC R BASIN  
 RF1 Index: 02070010053  
 RF3 Index: 02070010043700.60  
 Description:

LAT/LON: 38.832920/ -77.463892

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 3.570  
 RF3 Mile Point: 3.29

Agency: 31POTOMA  
 FIPS State/County: 51059 VIRGINIA/FAIRFAX  
 STORET Station ID(s): 101063 /SITE 27  
 Within Park Boundary: No

Date Created: / /

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 15.00  
 Distance from RF3: 0.00

On/Off RF1: OFF  
 On/Off RF3:

## Parameter Inventory for Station: MANA0010

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/21/73-11/21/73	5	9.	11.8	25.	3.	73.2	8.556	**	**	**	**
00075 TURBIDITY, HELLIGE (PPM AS SILICON DIOXIDE)	02/21/73-11/21/73	4	10.	9.35	13.	4.4	15.557	3.944	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	02/21/73-11/21/73	5	7.8	8.38	10.1	6.6	2.272	1.507	**	**	**	**
00310 BOD, 5 DAY, 20 DEG C MG/L	02/21/73-11/21/73	5	3.4	3.48	6.5	1.5	4.357	2.087	**	**	**	**
00400 PH (STANDARD UNITS)	02/21/73-11/21/73	4	7.3	7.2	7.4	6.8	0.073	0.271	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	02/21/73-11/21/73	4	7.3	7.127	7.4	6.8	0.08	0.284	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/21/73-11/21/73	4	0.05	0.075	0.158	0.04	0.003	0.056	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/21/73-11/21/73	5	16.	14.8	23.	9.	35.2	5.933	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/21/73-03/22/73	2	1.65	1.65	2.	1.3	0.245	0.495	**	**	**	**
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	02/21/73-03/22/73	2	0.	0.	0.	0.	0.	0.	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	02/21/73-03/22/73	2	2.05	2.05	2.1	2.	0.005	0.071	**	**	**	**
00650 PHOSPHATE, TOTAL (MG/L AS PO4)	02/21/73-03/22/73	2	0.465	0.465	0.51	0.42	0.004	0.064	**	**	**	**
00666 PHOSPHORUS, DISSOLVED (MG/L AS P)	05/18/73-11/21/73	3	1.72	1.493	2.2	0.56	0.711	0.843	**	**	**	**
31615 FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	02/21/73-11/21/73	5	0.	1.	5.	0.	5.	2.236	**	**	**	**
31615 LOG FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	02/21/73-11/21/73	5	0.	0.14	0.699	0.	0.098	0.313	**	**	**	**
31615 GM FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	GEOMETRIC MEAN =			1.38								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

## EPA Water Quality Criteria Analysis for Station: MANA0010

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	5	0	0.00	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00400 PH	Other-Hi Lim.	9.	4	0	0.00	2	0	0.00	3	0	0.00						
	Other-Lo Lim.	6.5	4	0	0.00	2	0	0.00	2	0	0.00						
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	2	0	0.00	1	0	0.00	1	0	0.00						
31615 FECAL COLIFORM, MPN	Other-Hi Lim.	200.	5	0	0.00	2	0	0.00	3	0	0.00						

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter



## Station Inventory for Station: MANA0011

NPS Station ID: MANA0011  
 Location: CUB RUN ABOVE MIDDLE CUB STP  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes: 0214001 002190 00800 0360  
 RMI-Miles: 0081.60 0016.90 011.20 004.50  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC R BASIN  
 RF1 Index: 02070010053  
 RF3 Index: 02070010005303.28  
 Description:

LAT/LON: 38.843615/ -77.464726

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 4.380  
 RF3 Mile Point: 3.59

Agency: 31POTOMA  
 FIPS State/County: 51059 VIRGINIA/FAIRFAX  
 STORET Station ID(s): 101064 /SITE 28  
 Within Park Boundary: No

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.01

Date Created: / /

On/Off RF1: OFF  
 On/Off RF3:

## Parameter Inventory for Station: MANA0011

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/21/73-11/21/73	5	7.	10.4	24.	3.	68.3	8.264	**	**	**	**
00075 TURBIDITY, HELLIGE (PPM AS SILICON DIOXIDE)	02/21/73-11/21/73	4	10.	9.4	14.	3.6	21.173	4.601	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	02/21/73-11/21/73	5	8.1	7.98	9.2	6.6	1.032	1.016	**	**	**	**
00310 BOD, 5 DAY, 20 DEG C MG/L	02/21/73-11/21/73	5	3.4	3.14	4.7	1.7	1.523	1.234	**	**	**	**
00400 PH (STANDARD UNITS)	02/21/73-11/21/73	4	7.35	7.175	7.5	6.5	0.209	0.457	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	02/21/73-11/21/73	4	7.347	6.961	7.5	6.5	0.27	0.52	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/21/73-11/21/73	4	0.045	0.109	0.316	0.032	0.019	0.138	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/21/73-11/21/73	5	9.	11.2	19.	4.	54.2	7.362	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/21/73-03/22/73	2	0.55	0.55	0.7	0.4	0.045	0.212	**	**	**	**
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	02/21/73-03/22/73	2	0.	0.	0.	0.	0.	0.	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	02/21/73-03/22/73	2	1.	1.	1.2	0.8	0.08	0.283	**	**	**	**
00650 PHOSPHATE, TOTAL (MG/L AS PO4)	02/21/73-03/22/73	2	0.13	0.13	0.16	0.1	0.002	0.042	**	**	**	**
00666 PHOSPHORUS, DISSOLVED (MG/L AS P)	05/18/73-11/21/73	3	0.18	0.18	0.24	0.12	0.004	0.06	**	**	**	**
31615 FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	02/21/73-11/21/73	5	0.	466.	2300.	0.	1051280.	1025.319	**	**	**	**
31615 LOG FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	02/21/73-11/21/73	5	0.	0.968	3.362	0.	2.2	1.483	**	**	**	**
31615 GM FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	GEOMETRIC MEAN =			9.285								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

## EPA Water Quality Criteria Analysis for Station: MANA0011

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	5	0	0.00	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00400 PH	Other-Hi Lim.	9.	4	0	0.00	2	0	0.00	3	0	0.00						
	Other-Lo Lim.	6.5	4	1	0.25	2	0	0.00	2	1	0.50						
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	2	0	0.00	1	0	0.00	1	0	0.00						
31615 FECAL COLIFORM, MPN	Other-Hi Lim.	200.	5	1	0.20	2	0	0.00	3	1	0.33						

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0012

NPS Station ID: MANA0012  
 Location: BULL RUN NEAR CATHARPIN, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC  
 RF1 Index: 02070010  
 RF3 Index: 02070010005200.55

LAT/LON: 38.889171/ -77.570559

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 1.12

Agency: 21VAOCCO  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): 51ST60  
 Within Park Boundary: No

Date Created: / /

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.05

On/Off RF1:  
 On/Off RF3:

Description:  
 DESCRIPTION OPERATED BY OCCOQUAN WATERSHED MONITORING PROGRAM. ADJACENT GAGING STA-  
 TION OPERATED BY VA. SWCB. AUTOMATIC SAMPLING EQUIPMENT PROGRAMMED TO RETRIEVE ALIQUOTS AT 0.5 FT. INCREMENTS OF STAGE. DRAINAGE AREA AT THE  
 GAGE IS 026 SQ.MI. NO MAJOR WASTE DISCHARGES UPSTREAM OF STATION. MAJOR LAND USE IN SUB-BASIN IS AGRICULTURE. MONITORING PROGRAM CONDUCTS A  
 WEEKLY GRAB SAMPLING PROGRAM IN ADDITION TO THE AUTOMATED SAMPLING.

### Parameter Inventory for Station: MANA0012

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	204	16.6	15.052	28.	0.	60.506	7.779	4.	7.625	21.875	25.
00061 FLOW, STREAM, INSTANTANEOUS CFS	01/01/73-06/21/78	353	30.	180.834	2420.	0.005	136724.251	369.762	2.	11.5	130.	569.
00065 STAGE, STREAM (FEET)	05/16/74-06/21/78	141	1.8	2.042	4.95	1.13	0.659	0.812	1.35	1.46	2.35	3.35
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	06/17/74-07/08/74	4	127.5	122.75	135.	101.	226.917	15.064	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	204	10.25	10.33	15.6	5.3	4.957	2.226	7.35	8.5	12.2	13.2
00310 BOD, 5 DAY, 20 DEG C MG/L	02/06/75-06/21/78	48	1.4	1.835	7.	0.	2.37	1.54	0.45	1.	2.4	3.71
00335 COD, .025N K2CR2O7 MG/L	11/04/77-06/21/78	6	49.55	50.233	76.3	27.8	248.063	15.75	**	**	**	**
00400 PH (STANDARD UNITS)	02/06/73-06/21/78	171	7.3	7.288	8.7	6.1	0.288	0.536	6.6	6.9	7.6	8.08
00400 CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	171	7.3	6.974	8.7	6.1	0.387	0.622	6.6	6.9	7.6	8.08
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	171	0.05	0.106	0.794	0.002	0.021	0.146	0.008	0.025	0.126	0.251
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	198	40.	41.02	75.	12.	152.304	12.341	25.9	31.	50.	57.
00430 ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	101	0.	0.218	13.	0.	2.172	1.474	0.	0.	0.	0.
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/01/73-06/21/78	390	10.	35.356	490.	0.	4007.56	63.305	3.	5.	33.5	93.
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	191	2.	2.816	16.	0.	6.144	2.479	0.8	1.	4.	5.
00600 NITROGEN, TOTAL (MG/L AS N)	01/03/76-06/21/78	166	1.185	1.437	10.4	0.44	1.047	1.023	0.697	0.9	1.615	2.573
00605 NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-06/21/78	184	0.72	0.891	8.59	0.01	0.667	0.817	0.25	0.513	0.999	1.675
00607 NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)	01/14/76-06/21/78	158	0.54	0.619	2.18	0.05	0.122	0.349	0.349	0.44	0.68	0.923
00608 NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	01/01/73-06/21/78	376	0.08	0.095	0.75	0.	0.006	0.077	0.02	0.04	0.13	0.183
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/13/73-08/27/73	18	0.021	0.042	0.158	0.	0.003	0.054	0.	0.006	0.052	0.154
00613 NITRITE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	68	0.009	0.01	0.055	0.	0.	0.013	0.	0.	0.015	0.03
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	28	0.	0.003	0.013	0.	0.	0.004	0.	0.	0.005	0.008
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	67	0.22	0.314	1.66	0.	0.097	0.312	0.02	0.06	0.53	0.736
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	28	0.3	0.347	0.778	0.1	0.036	0.188	0.151	0.203	0.494	0.628
00623 NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	01/14/76-06/21/78	159	0.65	0.722	2.4	0.12	0.147	0.383	0.43	0.52	0.78	1.06
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	01/01/73-06/21/78	424	1.02	1.202	9.34	0.025	0.81	0.9	0.242	0.653	1.53	2.39
00631 NITRITE PLUS NITRATE, DISS. I DET. (MG/L AS N)	01/07/75-06/21/78	343	0.4	0.382	4.1	0.01	0.088	0.297	0.1	0.2	0.5	0.7
00665 PHOSPHORUS, TOTAL (MG/L AS P)	01/01/73-06/21/78	437	0.09	0.126	1.9	0.	0.019	0.136	0.025	0.05	0.17	0.26
00666 PHOSPHORUS, DISSOLVED (MG/L AS P)	01/14/76-06/21/78	161	0.04	0.058	0.58	0.	0.004	0.062	0.02	0.03	0.07	0.108
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/01/73-06/21/78	403	0.02	0.032	0.49	0.	0.001	0.038	0.003	0.01	0.05	0.08

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0012

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	210	4.	4.759	16.2	0.8	6.215	2.493	2.2	3.	6.	7.77
00681	CARBON, DISSOLVED ORGANIC (MG/L AS C)	03/31/76-06/21/78	51	4.5	4.786	10.	0.	3.456	1.859	2.9	3.5	6.	6.84
00691	CARBON, DISSOLVED INORGANIC (MG/L AS C)	06/06/73-06/20/73	3	7.6	7.533	9.	6.	2.253	1.501	**	**	**	**
31505	COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	03/13/73-05/13/74	5	930.	3478.	11000.	430.	20728070.	4552.809	**	**	**	**
31505	LOG COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 3150	03/13/73-05/13/74	5	2.968	3.188	4.041	2.633	0.404	0.636	**	**	**	**
31505	GM COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506	GEOMETRIC MEAN =			1541.395								
31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	03/13/73-06/21/78	41	210.	1374.732	24000.	0.	16704399.101	4087.102	29.6	59.	430.	2800.
31615	LOG FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	03/13/73-06/21/78	41	2.322	2.278	4.38	0.	0.809	0.899	1.466	1.763	2.633	3.446
31615	GM FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	GEOMETRIC MEAN =			189.795								
31678	FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATION	06/20/73-07/23/73	2	1415.	1415.	2400.	430.	1940450.	1393.	**	**	**	**
31678	LOG FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATI	06/20/73-07/23/73	2	3.007	3.007	3.38	2.633	0.279	0.528	**	**	**	**
31678	GM FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATIO	GEOMETRIC MEAN =			1015.874								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0012

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300	OXYGEN, DISSOLVED	Other-Lo Lim.	4.	204	0	0.00	73	0	0.00	84	0	0.00	47	0	0.00		
00400	PH	Other-Hi Lim.	9.	171	0	0.00	55	0	0.00	72	0	0.00	44	0	0.00		
		Other-Lo Lim.	6.5	171	16	0.09	55	9	0.16	72	7	0.10	44	0	0.00		
00613	NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	68	0	0.00	36	0	0.00	17	0	0.00	15	0	0.00		
00615	NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	28	0	0.00	6	0	0.00	15	0	0.00	7	0	0.00		
00618	NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	67	0	0.00	36	0	0.00	17	0	0.00	14	0	0.00		
00620	NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	28	0	0.00	6	0	0.00	15	0	0.00	7	0	0.00		
00631	NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	343	0	0.00	152	0	0.00	123	0	0.00	68	0	0.00		
31505	COLIFORM, TOTAL, MPN, CONF. TEST, 35C	Other-Hi Lim.	1000.	5	2	0.40	1	0	0.00	3	1	0.33	1	1	1.00		
31615	FECAL COLIFORM, MPN	Other-Hi Lim.	200.	41	22	0.54	11	6	0.55	18	10	0.56	12	6	0.50		

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### Annual Analysis for 1973 - Station MANA0012

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	43	17.	15.181	27.	1.	62.701	7.918	3.2	7.5	23.	25.
00061	FLOW, STREAM, INSTANTANEOUS CFS	01/01/73-06/21/78	1	560.	560.	560.	560.	0.	0.	**	**	**	**
00300p	OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	43	10.	10.198	13.4	6.4	3.092	1.758	7.74	9.2	11.5	12.84
00400p	PH (STANDARD UNITS)	02/06/73-06/21/78	28	7.4	7.245	8.3	6.1	0.352	0.593	6.2	6.8	7.6	7.92
00400p	CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	28	7.4	6.84	8.3	6.1	0.522	0.722	6.2	6.8	7.6	7.92
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	28	0.04	0.145	0.794	0.005	0.048	0.219	0.012	0.025	0.158	0.631
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	40	38.	39.25	60.	16.	138.808	11.782	23.2	29.	50.	54.
00430	ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/01/73-06/21/78	45	6.	11.178	93.	0.	344.377	18.557	1.	3.5	10.	22.4
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	44	3.	3.636	16.	0.	10.888	3.3	1.	1.	4.	7.5
00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-06/21/78	18	0.145	0.215	0.995	0.01	0.052	0.229	0.055	0.085	0.245	0.541
00608p	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	01/01/73-06/21/78	17	0.009	0.029	0.168	0.	0.002	0.048	0.	0.003	0.025	0.13
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	01/01/73-06/21/78	30	0.158	0.217	0.96	0.037	0.036	0.189	0.072	0.108	0.268	0.421
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	01/01/73-06/21/78	41	0.029	0.051	0.29	0.006	0.003	0.055	0.015	0.02	0.06	0.13
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/01/73-06/21/78	43	0.01	0.022	0.135	0.	0.001	0.031	0.001	0.006	0.02	0.073
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	33	3.6	4.245	16.2	1.	9.966	3.157	1.68	2.25	4.8	8.96

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1974 - Station MANA0012

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	50	12.1	12.964	28.	0.	63.542	7.971	3.5	5.	20.25	24.
00065	STAGE, STREAM (FEET)	05/16/74-06/21/78	40	1.445	1.583	3.99	1.24	0.23	0.479	1.271	1.353	1.645	2.01
00300p	OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	50	10.3	10.432	14.4	5.3	5.422	2.329	7.2	8.8	12.4	13.8
00400p	PH (STANDARD UNITS)	02/06/73-06/21/78	35	7.4	7.423	8.7	6.6	0.214	0.462	6.82	7.2	7.7	8.06
00400p	CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	35	7.4	7.229	8.7	6.6	0.252	0.502	6.82	7.2	7.7	8.06
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	35	0.04	0.059	0.251	0.002	0.003	0.058	0.01	0.02	0.063	0.155
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	49	40.	38.837	61.	12.	120.223	10.965	24.	31.	46.5	53.
00430	ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	1	13.	13.	13.	13.	0.	0.	**	**	**	**
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/01/73-06/21/78	52	4.5	6.212	52.	0.	65.856	8.115	1.	2.	7.	10.7
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	51	2.	2.765	12.	0.	5.464	2.337	1.	1.	4.	4.8
00608p	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	01/01/73-06/21/78	51	0.04	0.045	0.14	0.	0.002	0.039	0.006	0.013	0.06	0.116
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	01/01/73-06/21/78	51	0.32	0.618	4.	0.025	0.588	0.767	0.096	0.148	0.82	1.546
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	01/01/73-06/21/78	51	0.05	0.072	0.4	0.	0.007	0.084	0.011	0.025	0.1	0.138
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/01/73-06/21/78	52	0.01	0.015	0.09	0.	0.	0.017	0.	0.006	0.02	0.03
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	62	3.65	4.594	12.	0.8	7.323	2.706	1.86	2.65	6.125	8.85

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1975 - Station MANA0012

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	39	17.	15.821	27.5	1.	66.888	8.179	4.	7.5	23.5	26.
00061	FLOW, STREAM, INSTANTANEOUS CFS	01/01/73-06/21/78	174	59.5	242.654	2420.	0.8	194978.278	441.563	5.5	18.75	227.	840.
00300p	OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	39	11.3	10.815	15.6	6.8	4.795	2.19	7.7	8.8	12.5	13.5
00400p	PH (STANDARD UNITS)	02/06/73-06/21/78	38	7.15	7.134	8.4	6.2	0.25	0.5	6.4	6.8	7.425	7.81
00400p	CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	38	7.147	6.889	8.4	6.2	0.312	0.558	6.4	6.8	7.425	7.81
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	38	0.071	0.129	0.631	0.004	0.021	0.144	0.016	0.038	0.158	0.398
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	37	41.	40.595	60.	25.	100.803	10.04	26.	32.5	48.	55.2
00430	ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/01/73-06/21/78	118	20.5	47.254	299.	1.	3386.157	58.191	4.	7.	67.	146.
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	33	2.	1.979	5.	0.	1.611	1.269	0.8	1.	2.	4.6
00608p	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	01/01/73-06/21/78	135	0.1	0.114	0.56	0.02	0.006	0.076	0.04	0.06	0.16	0.22
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	01/01/73-06/21/78	170	1.475	1.677	4.35	0.52	0.576	0.759	0.873	1.13	2.025	2.748

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1975 - Station MANA0012

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	01/07/75-06/21/78	169	0.4	0.381	1.	0.04	0.041	0.204	0.1	0.2	0.5	0.7
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	01/01/73-06/21/78	170	0.16	0.17	0.86	0.03	0.012	0.108	0.06	0.09	0.22	0.3
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/01/73-06/21/78	138	0.04	0.044	0.12	0.	0.001	0.033	0.01	0.01	0.07	0.09
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	48	4.4	4.929	9.5	1.8	3.694	1.922	2.95	3.5	6.45	7.53

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1976 - Station MANA0012

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	29	15.5	14.928	25.	0.5	57.813	7.604	4.	8.	22.25	24.
00061	FLOW, STREAM, INSTANTANEOUS CFS	01/01/73-06/21/78	122	33.5	156.906	2070.	0.02	98289.737	313.512	2.	14.	130.	569.
00065	STAGE, STREAM (FEET)	05/16/74-06/21/78	45	2.4	2.512	4.95	1.13	1.056	1.028	1.338	1.555	3.35	4.05
00300p	OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	29	10.6	10.51	15.2	6.8	5.578	2.362	7.3	8.25	12.5	13.4
00400p	PH (STANDARD UNITS)	02/06/73-06/21/78	29	7.3	7.276	8.4	6.3	0.334	0.578	6.4	6.85	7.65	8.1
00400p	CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	29	7.3	6.947	8.4	6.3	0.446	0.668	6.4	6.85	7.65	8.1
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	29	0.05	0.113	0.501	0.004	0.02	0.142	0.008	0.023	0.142	0.398
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	29	34.	39.621	58.	21.	125.387	11.198	29.	30.	49.5	57.
00430	ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	27	0.	0.074	2.	0.	0.148	0.385	0.	0.	0.	0.
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/01/73-06/21/78	121	21.	47.769	454.	2.	5379.563	73.346	4.	8.	53.5	111.6
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	21	1.	1.762	6.	0.	2.723	1.65	0.06	0.45	3.	4.
00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-06/21/78	114	0.785	1.081	8.59	0.16	0.899	0.948	0.475	0.627	1.183	2.275
00608p	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	01/01/73-06/21/78	121	0.09	0.111	0.75	0.	0.008	0.087	0.04	0.06	0.14	0.2
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	01/01/73-06/21/78	120	0.925	1.198	9.34	0.31	0.967	0.983	0.6	0.73	1.34	2.4
00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	01/07/75-06/21/78	121	0.4	0.408	4.1	0.01	0.161	0.401	0.1	0.2	0.5	0.7
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	01/01/73-06/21/78	121	0.09	0.133	1.9	0.01	0.036	0.191	0.04	0.06	0.145	0.28
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/01/73-06/21/78	117	0.03	0.037	0.49	0.	0.003	0.051	0.004	0.01	0.05	0.08
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	25	4.	4.352	7.	1.5	3.253	1.804	2.08	2.95	6.	7.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1977 - Station MANA0012

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	32	19.	17.709	28.	4.	46.961	6.853	6.29	13.625	23.25	25.5
00061	FLOW, STREAM, INSTANTANEOUS CFS	01/01/73-06/21/78	40	5.5	25.309	321.	0.005	4667.661	68.32	0.052	0.35	11.5	68.4
00065	STAGE, STREAM (FEET)	05/16/74-06/21/78	40	1.825	1.927	3.67	1.38	0.253	0.503	1.462	1.613	1.985	2.67
00300p	OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	32	8.8	9.559	15.4	5.9	6.456	2.541	6.81	7.55	11.5	13.27
00400p	PH (STANDARD UNITS)	02/06/73-06/21/78	30	7.4	7.382	8.2	6.2	0.285	0.534	6.7	6.975	7.825	8.195
00400p	CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	30	7.4	7.069	8.2	6.2	0.386	0.621	6.7	6.975	7.825	8.195
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	30	0.04	0.085	0.631	0.006	0.016	0.126	0.006	0.015	0.106	0.2
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	32	48.	49.906	75.	25.	243.959	15.619	28.6	35.	63.25	73.
00430	ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	31	0.	0.226	7.	0.	1.581	1.257	0.	0.	0.	0.
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/01/73-06/21/78	39	9.	29.405	490.	0.3	7265.909	85.24	3.	4.	15.	43.
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	31	3.	3.532	12.	0.2	7.278	2.698	1.	2.	5.	7.8
00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-06/21/78	38	0.745	0.753	1.9	0.29	0.12	0.347	0.399	0.448	0.863	1.332
00608p	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	01/01/73-06/21/78	38	0.06	0.077	0.29	0.002	0.004	0.06	0.029	0.04	0.103	0.142
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	01/01/73-06/21/78	38	0.795	0.843	2.19	0.31	0.139	0.373	0.476	0.565	0.968	1.424
00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	01/07/75-06/21/78	39	0.2	0.278	0.9	0.01	0.064	0.252	0.02	0.06	0.4	0.7
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	01/01/73-06/21/78	39	0.06	0.088	0.59	0.02	0.009	0.096	0.03	0.05	0.09	0.16
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/01/73-06/21/78	39	0.01	0.019	0.11	0.	0.	0.02	0.004	0.01	0.02	0.04
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	31	5.5	5.935	14.5	2.6	7.114	2.667	3.	4.	7.1	9.88

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

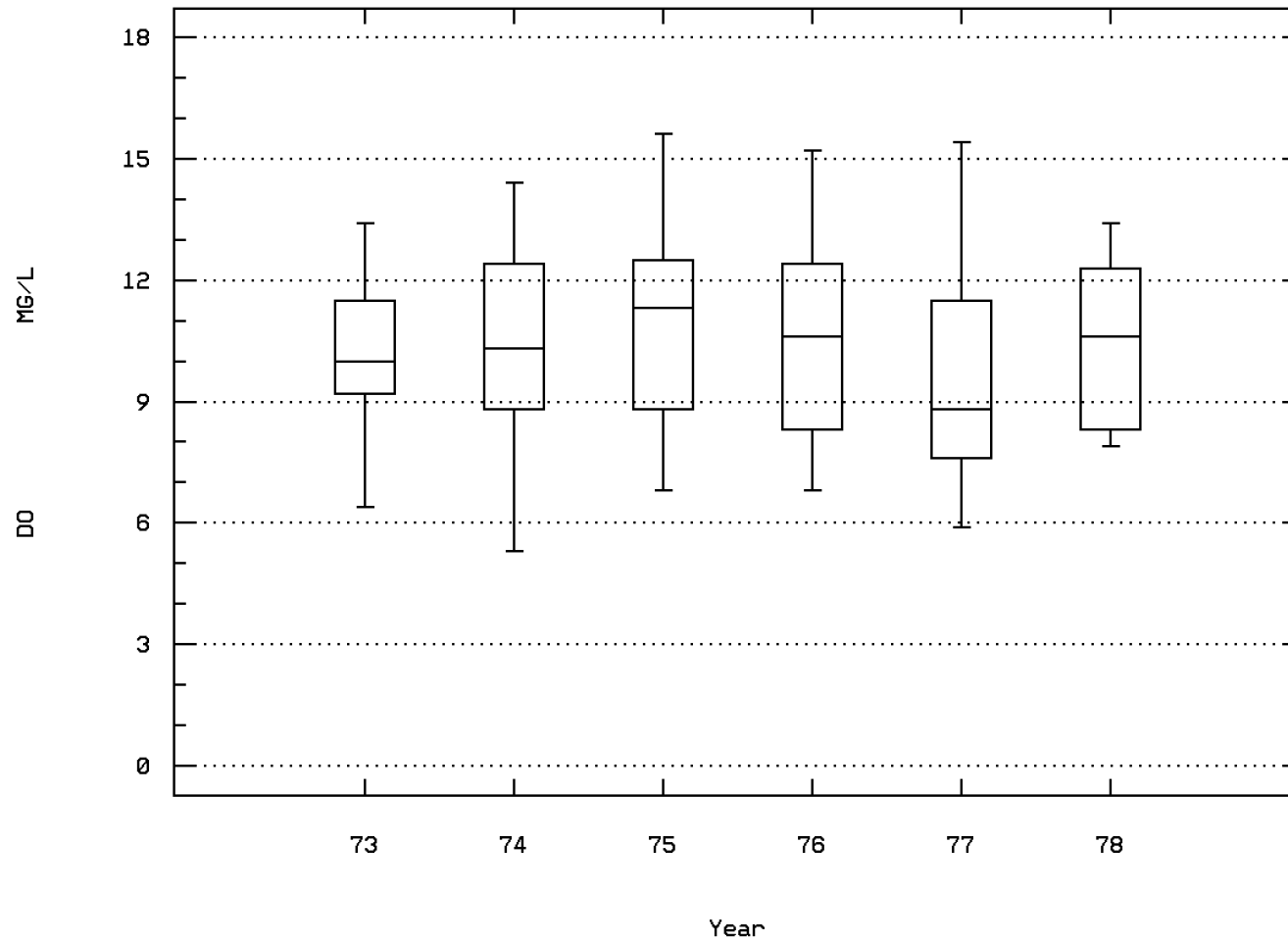
### Annual Analysis for 1978 - Station MANA0012

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	11	15.	13.909	24.	0.5	43.691	6.61	2.	8.5	19.	23.
00061	FLOW, STREAM, INSTANTANEOUS CFS	01/01/73-06/21/78	16	7.5	56.099	482.	0.09	15036.06	122.622	0.167	1.5	73.5	255.2
00065	STAGE, STREAM (FEET)	05/16/74-06/21/78	16	1.875	2.153	4.15	1.52	0.523	0.723	1.562	1.67	2.65	3.443
00300p	OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	11	10.6	10.436	13.4	7.9	4.169	2.042	7.96	8.3	12.3	13.3
00400p	PH (STANDARD UNITS)	02/06/73-06/21/78	11	7.2	7.273	8.2	6.3	0.342	0.585	6.32	7.	7.7	8.16
00400p	CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	11	7.2	6.925	8.2	6.3	0.475	0.689	6.32	7.	7.7	8.16
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	11	0.063	0.119	0.501	0.006	0.028	0.167	0.007	0.02	0.1	0.481
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	11	39.	36.455	52.	17.	93.873	9.689	18.6	31.	42.	50.4
00430	ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/01/73-06/21/78	15	7.	30.667	358.	2.	8218.81	90.658	2.6	4.	13.	153.4
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	11	2.	2.273	4.	1.	0.618	0.786	1.2	2.	3.	3.8
00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-06/21/78	14	0.585	0.591	1.23	0.24	0.07	0.264	0.245	0.368	0.728	1.06
00608p	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	01/01/73-06/21/78	14	0.065	0.076	0.13	0.04	0.001	0.025	0.045	0.06	0.093	0.12
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	01/01/73-06/21/78	15	0.67	0.699	1.36	0.29	0.088	0.297	0.308	0.44	0.82	1.24
00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	01/07/75-06/21/78	14	0.4	0.441	1.	0.08	0.062	0.249	0.14	0.275	0.6	0.9
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	01/01/73-06/21/78	15	0.04	0.055	0.34	0.01	0.006	0.08	0.016	0.02	0.04	0.166
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/01/73-06/21/78	14	0.01	0.013	0.03	0.	0.	0.008	0.	0.01	0.02	0.025
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	11	4.1	4.091	5.2	2.9	0.457	0.676	3.02	3.6	4.5	5.18

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0012 Parameter Code: 00300

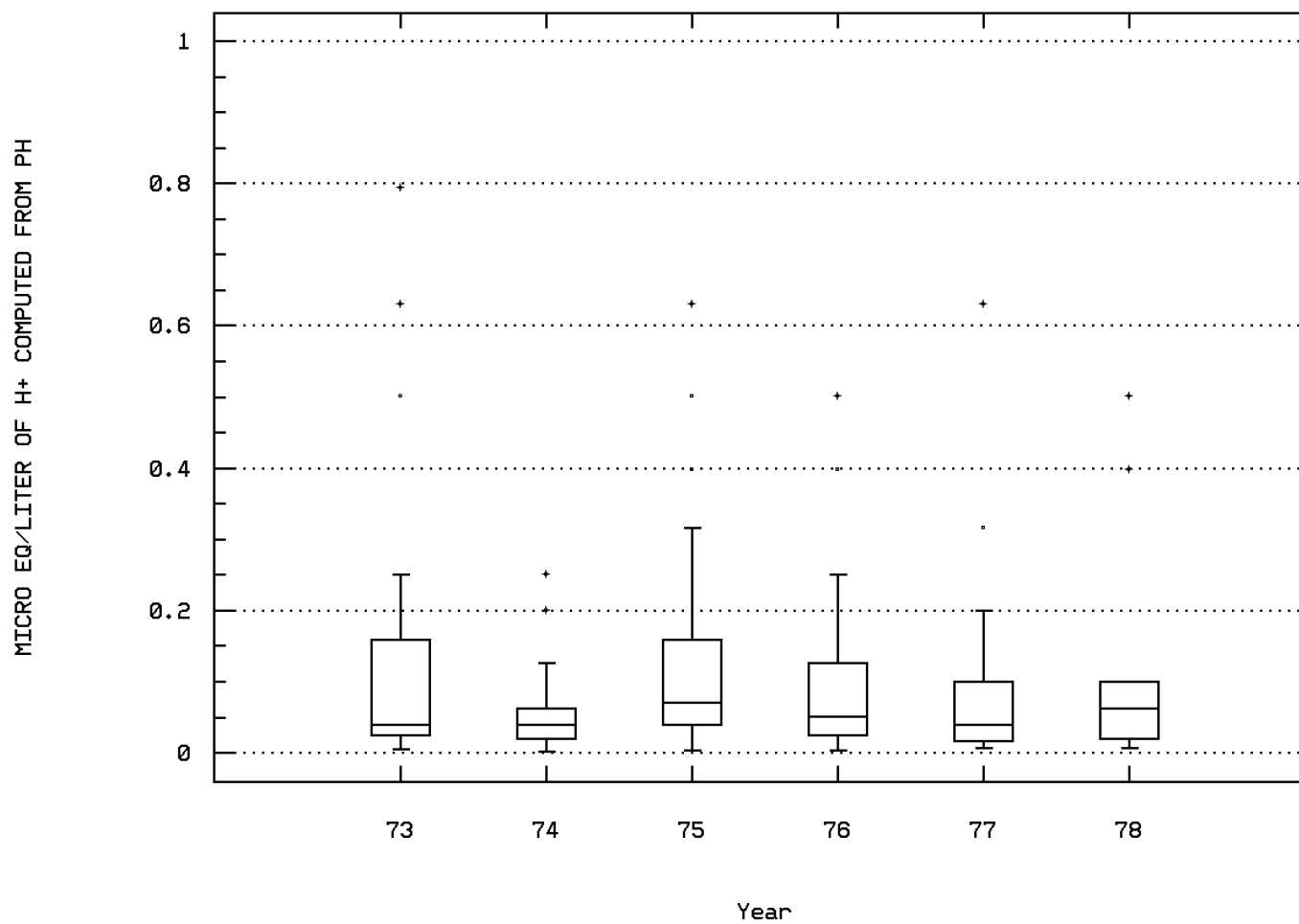
OXYGEN, DISSOLVED



BULL RUN NEAR CATHARPIN, VA

Station: MANA0012 Parameter Code: 00400

MICRO EQ/LITER OF H+ COMPUTED FROM PH

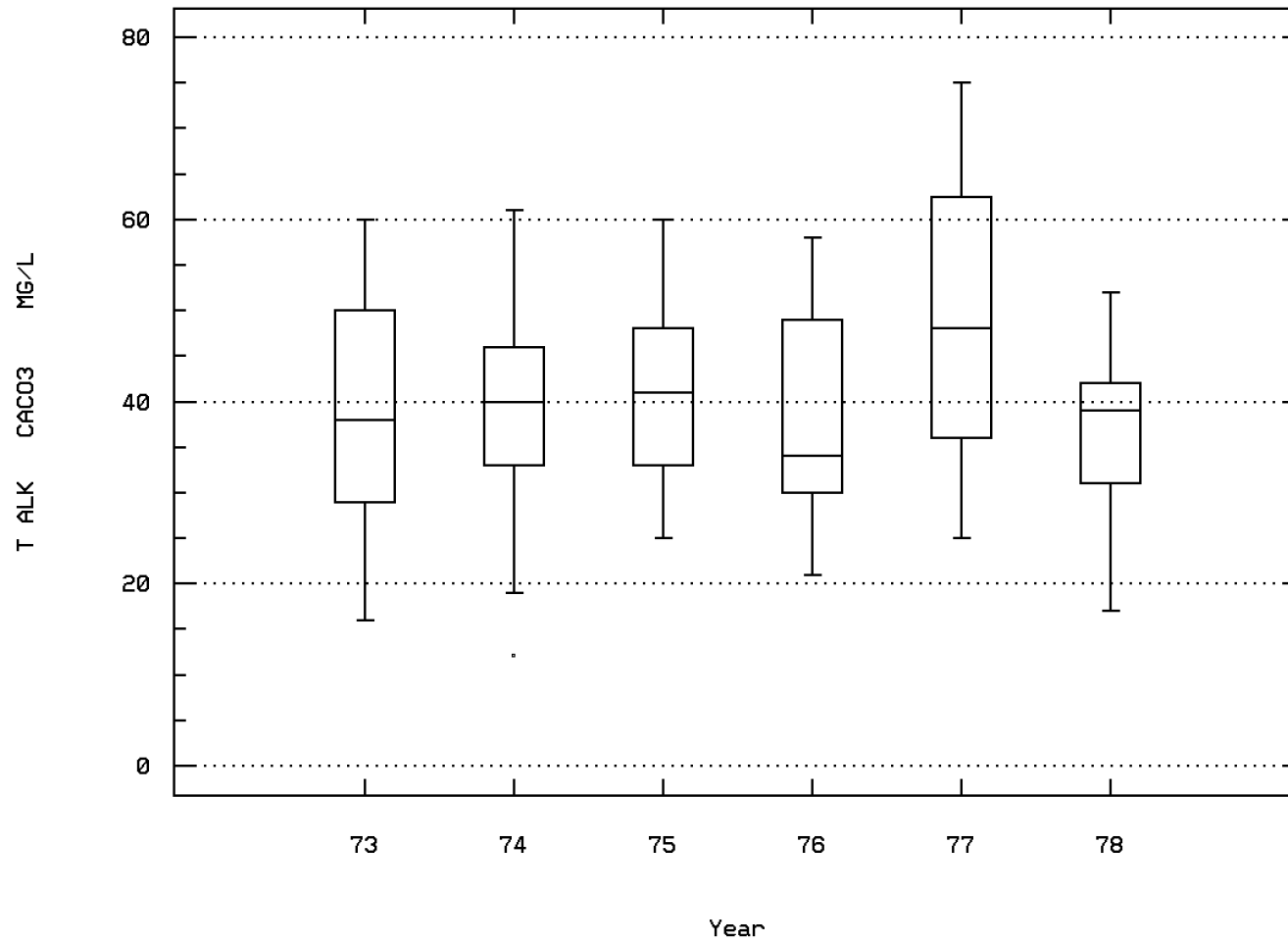


BULL RUN NEAR CATHARPIN, VA



Station: MANA0012 Parameter Code: 00410

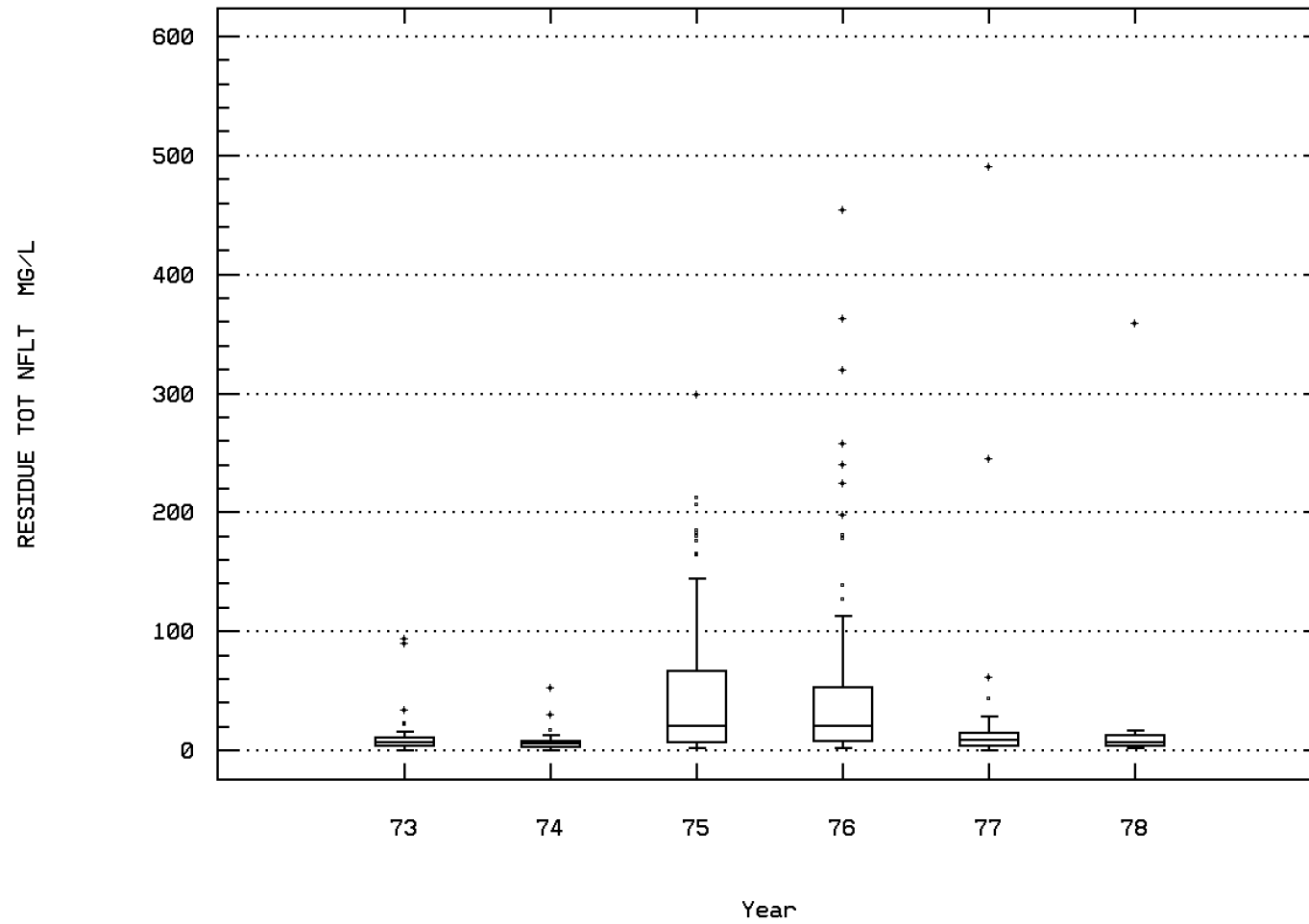
ALKALINITY, TOTAL (MG/L AS CaCO3)



BULL RUN NEAR CATHARPIN, VA

Station: MANA0012 Parameter Code: 00530

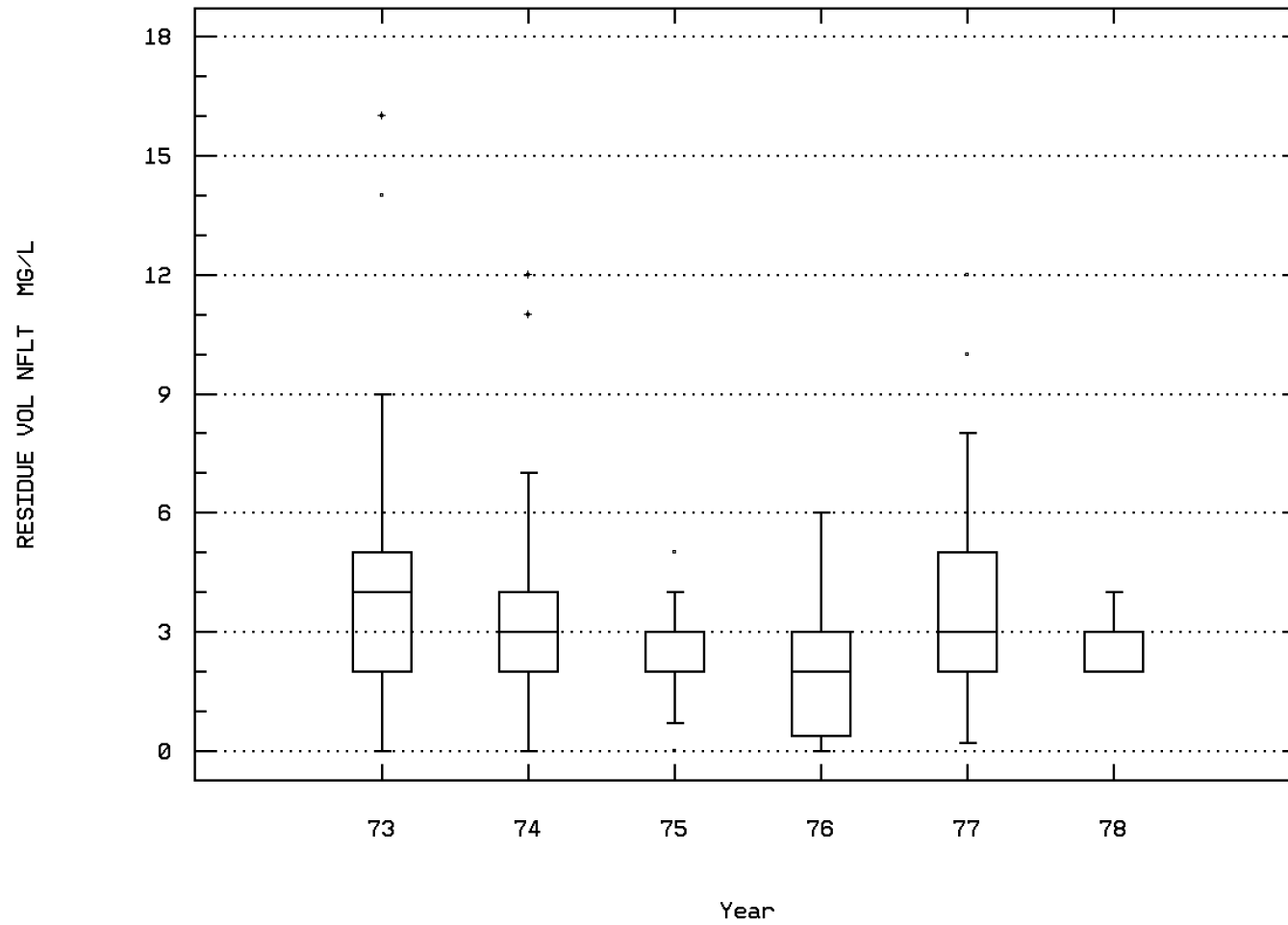
RESIDUE, TOTAL NONFILTRABLE (MG/L)



BULL RUN NEAR CATHARPIN, VA

Station: MANA0012 Parameter Code: 00535

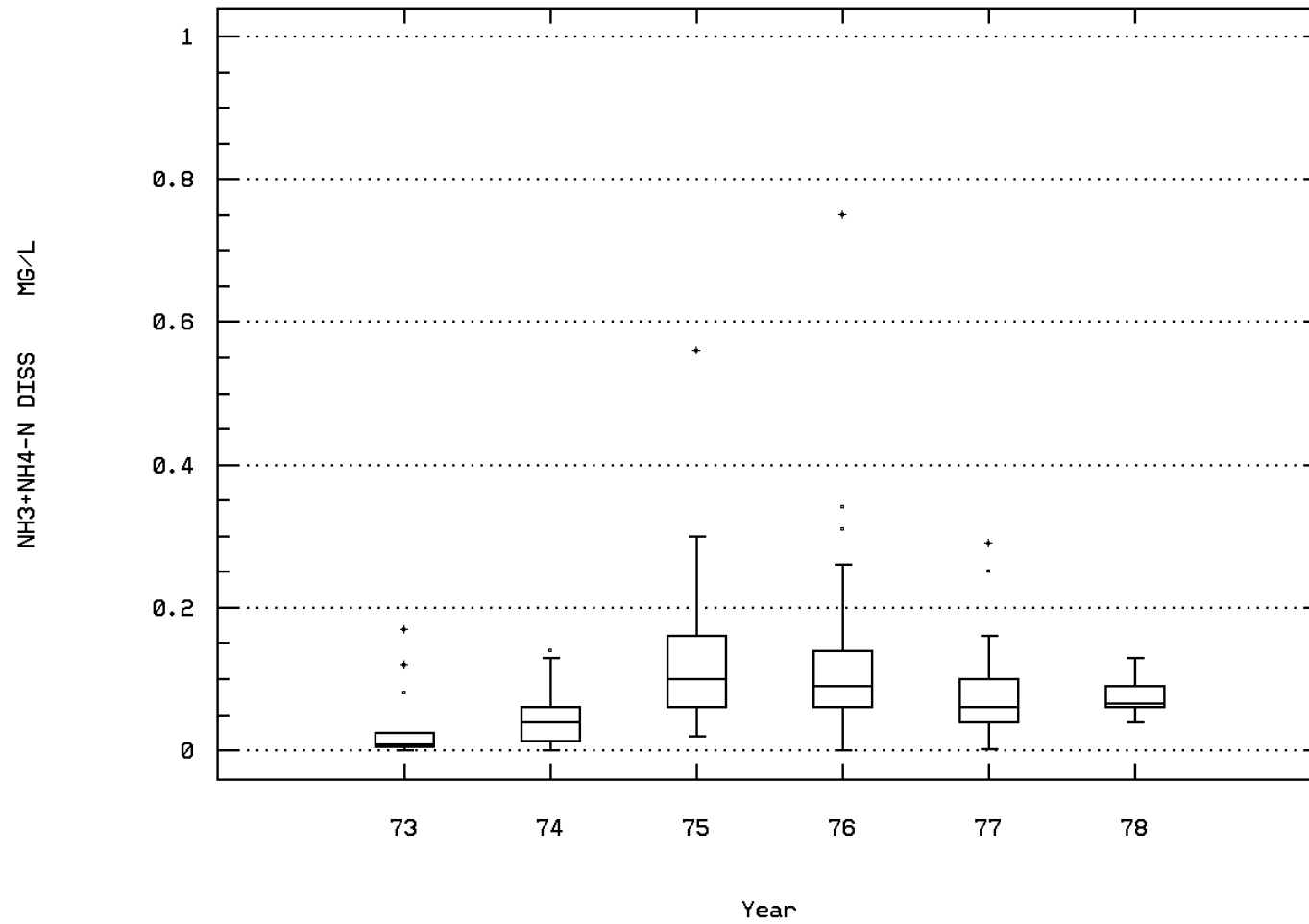
RESIDUE, VOLATILE NONFILTRABLE (MG/L)



BULL RUN NEAR CATHARPIN, VA

Station: MANA0012 Parameter Code: 00608

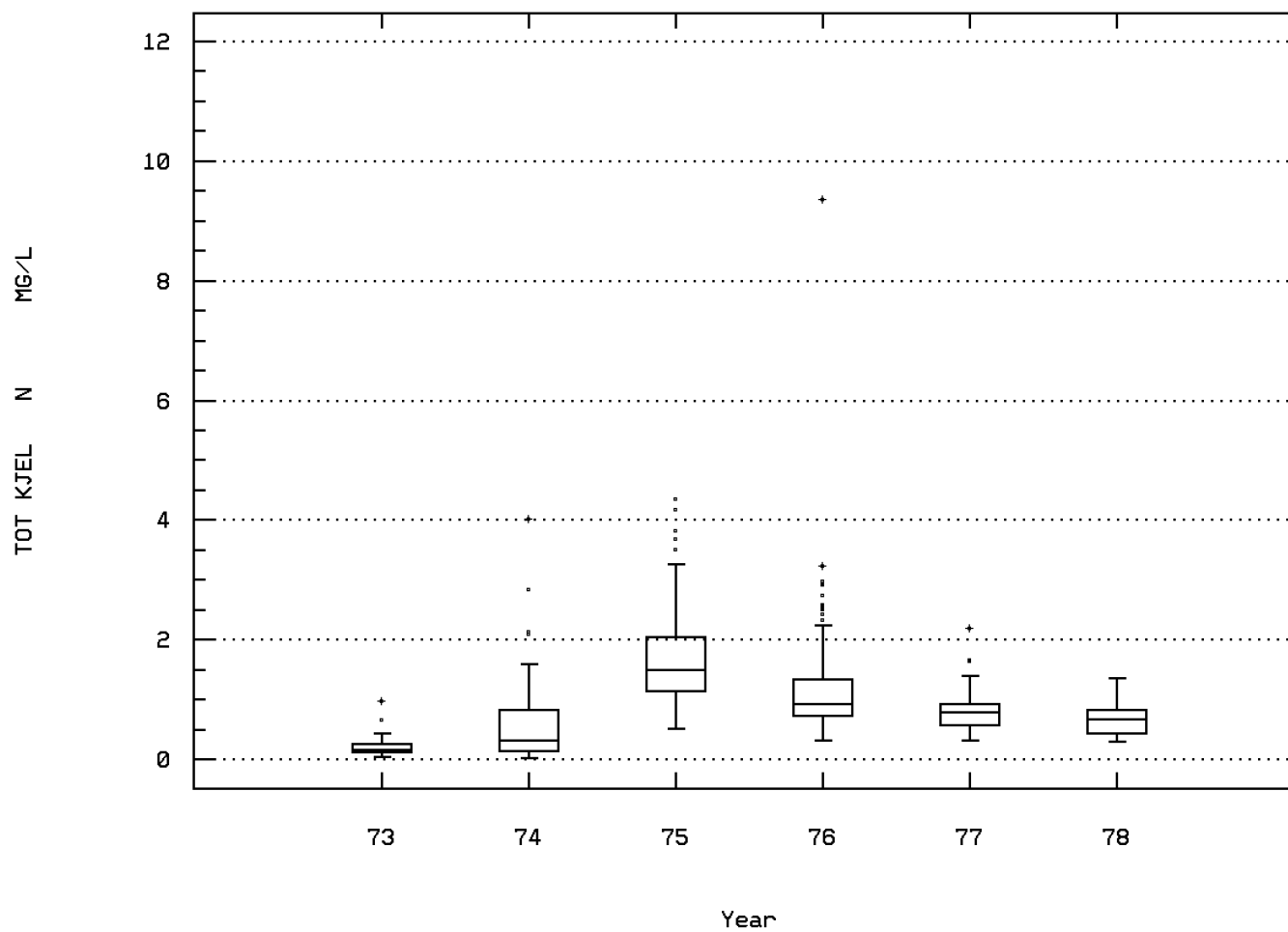
NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)



BULL RUN NEAR CATHARPIN, VA

Station: MANA0012 Parameter Code: 00625

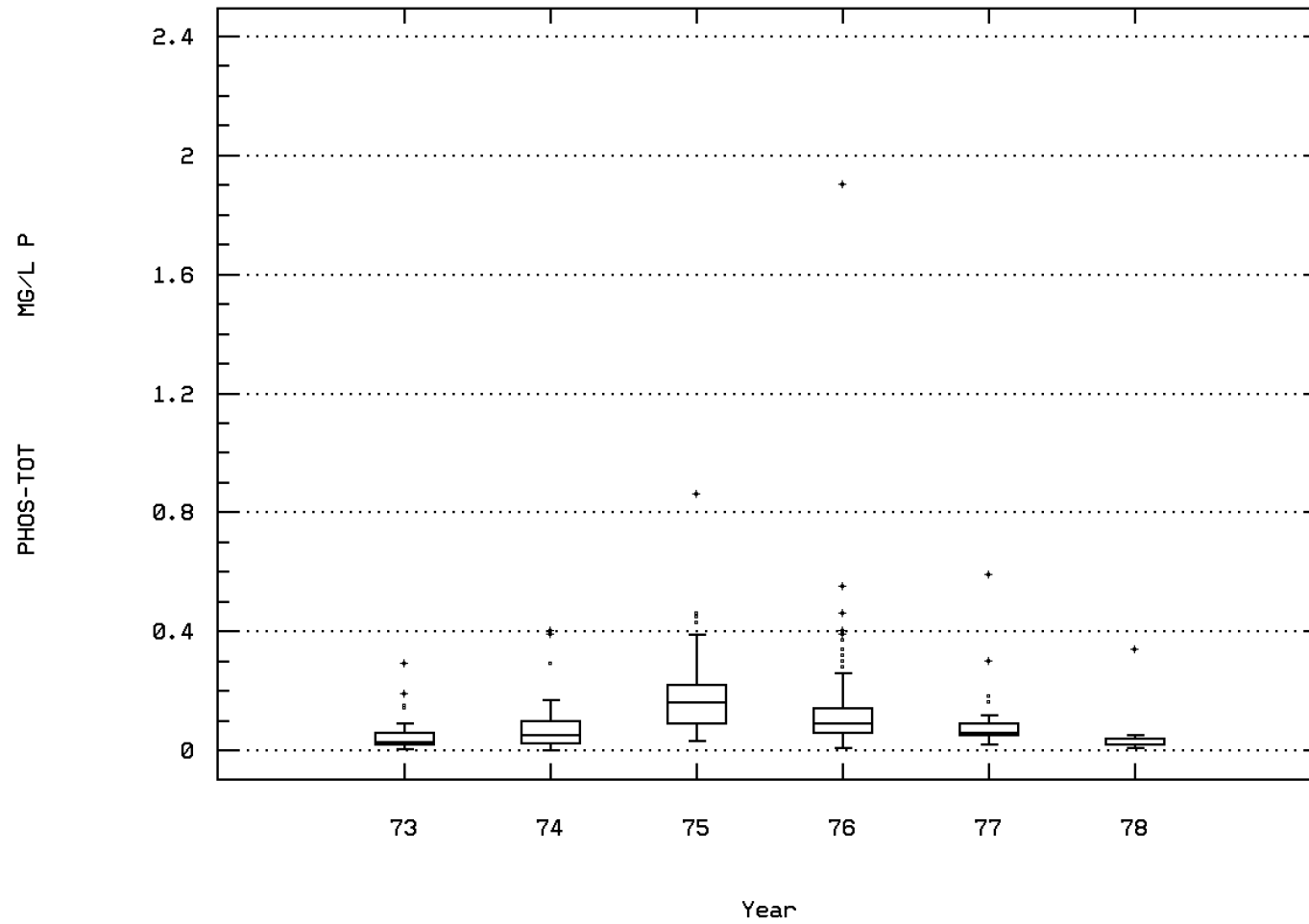
NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)



BULL RUN NEAR CATHARPIN, VA

Station: MANA0012 Parameter Code: 00665

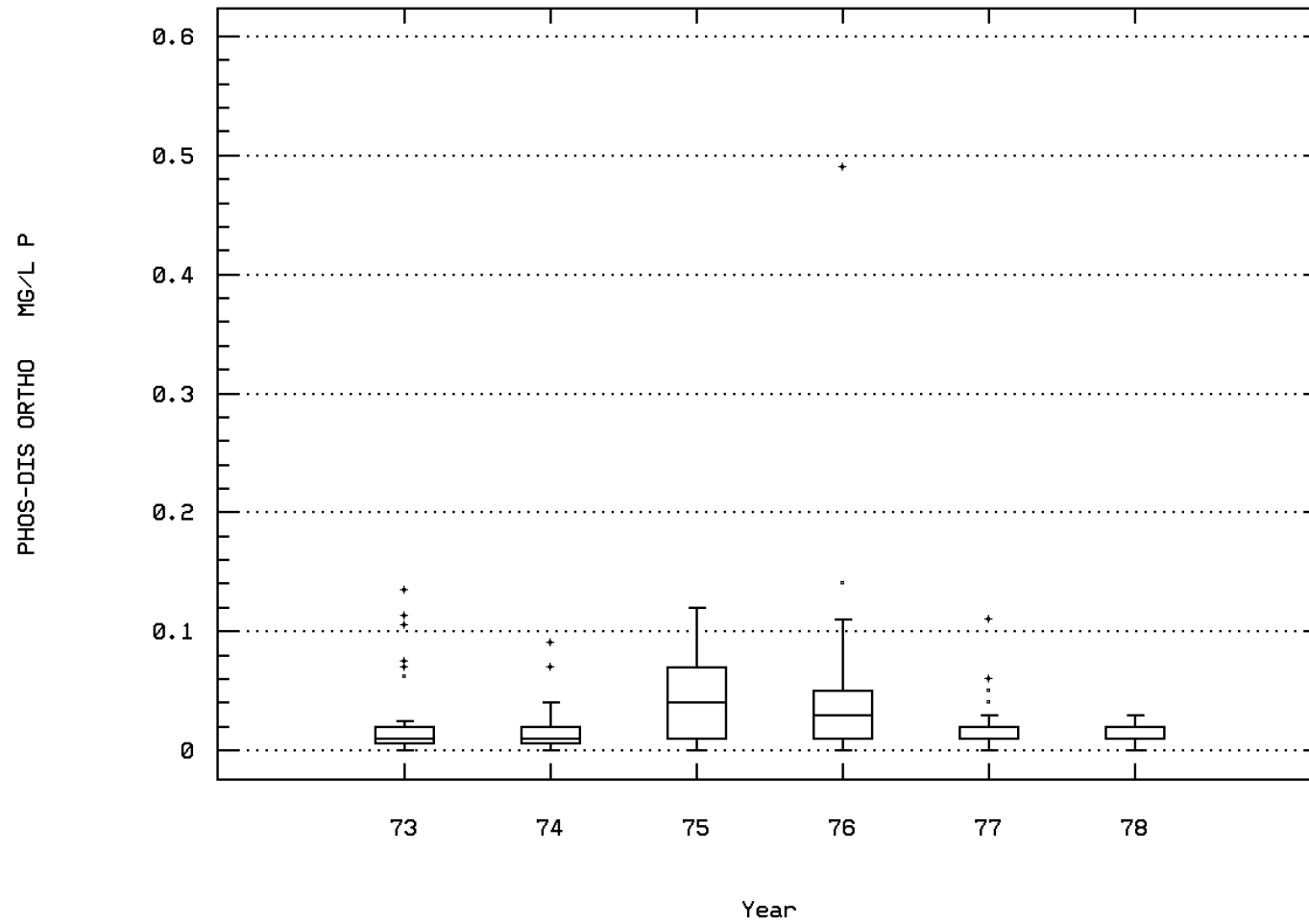
PHOSPHORUS, TOTAL (MG/L AS P)



BULL RUN NEAR CATHARPIN, VA

Station: MANA0012 Parameter Code: 00671

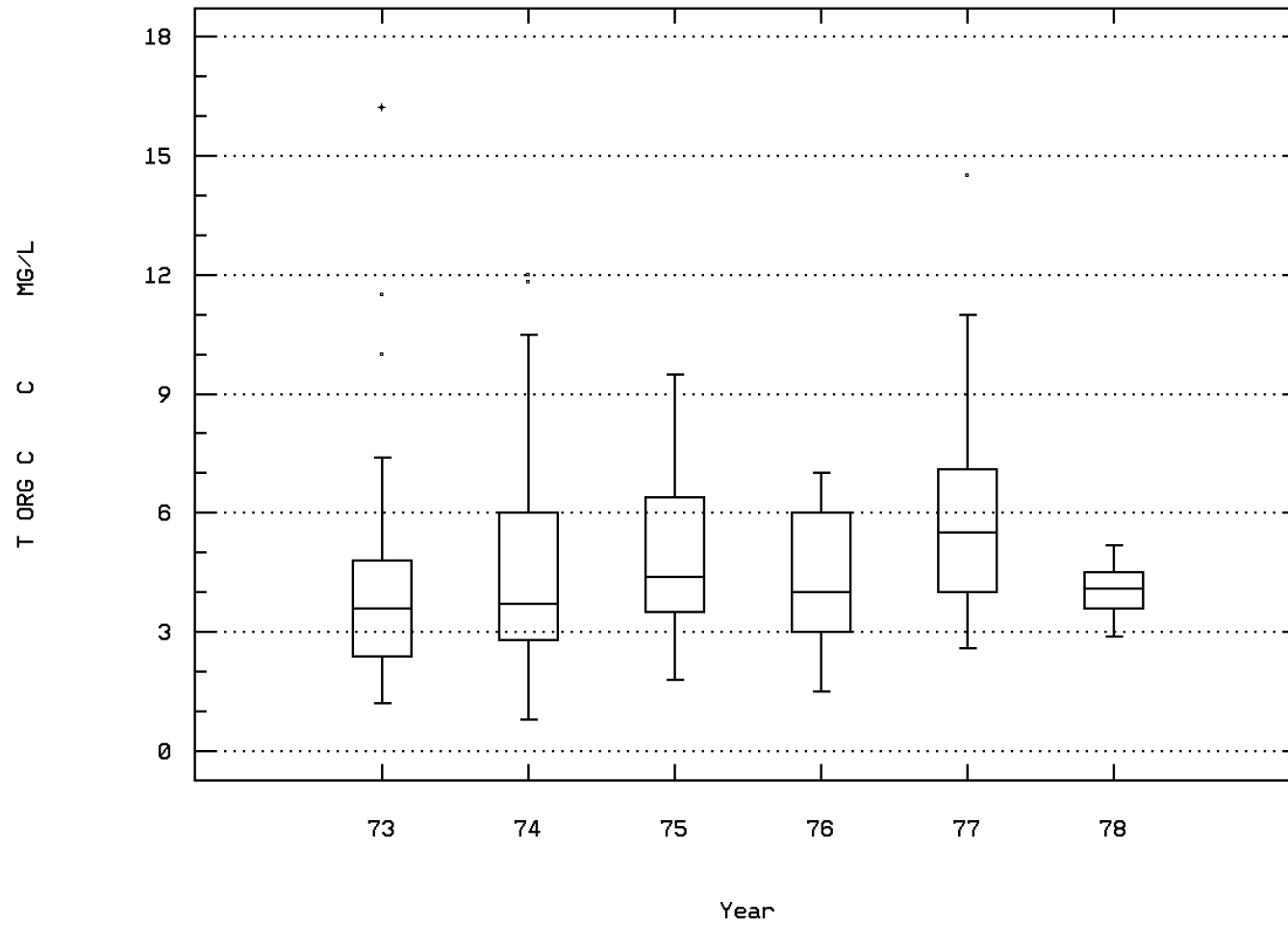
PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (M



BULL RUN NEAR CATHARPIN, VA

Station: MANA0012 Parameter Code: 00680

CARBON, TOTAL ORGANIC (MG/L AS C)



BULL RUN NEAR CATHARPIN, VA



## Station Inventory for Station: MANA0013

NPS Station ID: MANA0013  
 Location: CUB RUN NEAR BULL RUN, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin:  
 Minor Basin:  
 RF1 Index: 02070010  
 RF3 Index: 02070008002907.55  
 Description:

LAT/LON: 38.821115/ -77.465838

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 8.88

Agency: 112WRD  
 FIPS State/County: 51059 VIRGINIA/FAIRFAX  
 STORET Station ID(s): 01656960  
 Within Park Boundary: No

Date Created: / /

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.05

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0013

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-12/30/74	95	14.5	14.053	27.	1.	57.476	7.581	4.	7.	21.	24.
00065 STAGE, STREAM (FEET)	03/25/74-12/30/74	45	1.86	2.17	8.74	1.45	1.487	1.219	1.502	1.575	2.225	3.308
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	06/17/74-07/09/74	4	260.	229.5	270.	128.	4601.	67.831	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	02/06/73-12/30/74	94	9.35	9.752	14.4	5.9	3.96	1.99	7.35	8.175	11.4	12.6
00310 BOD, 5 DAY, 20 DEG C MG/L	01/07/74-11/19/74	18	2.05	2.244	4.1	1.	0.731	0.855	1.09	1.775	2.625	3.83
00400 PH (STANDARD UNITS)	02/06/73-12/30/74	62	7.2	7.195	8.2	6.1	0.223	0.472	6.4	6.975	7.5	7.8
00400 CONVERTED PH (STANDARD UNITS)	02/06/73-12/30/74	62	7.2	6.921	8.2	6.1	0.299	0.547	6.4	6.975	7.5	7.8
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-12/30/74	62	0.063	0.12	0.794	0.006	0.028	0.167	0.016	0.032	0.106	0.398
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-12/30/74	91	43.	42.099	70.	15.	157.801	12.562	25.	32.	50.	58.
00430 ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-10/01/73	20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00515 RESIDUE, TOTAL FILTRABLE (DRIED AT 105C),MG/L	02/06/73-12/30/74	99	7.	16.121	158.	0.	632.25	25.145	2.	5.	16.	36.
00520 RESIDUE, VOLATILE FILTRABLE (MG/L)	02/06/73-12/30/74	93	3.	4.194	30.	0.	16.419	4.052	1.	2.	5.	9.
00605 NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-08/27/73	18	0.265	0.349	0.945	0.01	0.062	0.25	0.127	0.17	0.435	0.851
00607 NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)	12/02/74-12/09/74	2	1.55	1.55	1.8	1.3	0.125	0.354	**	**	**	**
00608 NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	70	0.217	0.316	1.84	0.019	0.116	0.34	0.06	0.14	0.326	0.737
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/13/73-08/27/73	19	0.12	0.107	0.35	0.011	0.006	0.076	0.023	0.052	0.135	0.178
00613 NITRITE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	71	0.062	0.088	1.25	0.005	0.022	0.149	0.017	0.03	0.1	0.138
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	28	0.066	0.074	0.25	0.009	0.003	0.051	0.018	0.034	0.104	0.125
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	71	1.52	1.893	5.65	0.4	1.176	1.084	0.734	1.06	2.72	3.402
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	28	1.417	1.616	4.615	0.411	0.712	0.844	0.855	1.014	2.059	2.622
00623 NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	12/02/74-12/09/74	2	1.675	1.675	1.88	1.47	0.084	0.29	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/04/73-12/30/74	82	0.464	1.306	22.	0.11	7.186	2.681	0.228	0.339	1.343	2.5
00660 PHOSPHATE, ORTHO (MG/L AS PO4)	02/20/73-12/30/74	97	1.3	1.874	7.3	0.09	2.834	1.683	0.278	0.64	2.6	4.5
00665 PHOSPHORUS, TOTAL (MG/L AS P)	03/06/73-12/30/74	94	0.519	0.688	2.37	0.088	0.314	0.56	0.149	0.274	0.972	1.588
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-12/30/74	97	0.42	0.61	2.37	0.03	0.301	0.549	0.09	0.21	0.841	1.472
00673 PHOSPHORUS, DISSOLVED ORGANIC (MG/L AS P)	12/02/74-12/09/74	2	0.025	0.025	0.03	0.02	0.	0.007	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-12/30/74	100	6.	6.882	18.5	1.6	13.528	3.678	3.3	4.525	7.725	12.87
00691 CARBON, DISSOLVED INORGANIC (MG/L AS C)	06/04/73-06/20/73	3	8.9	8.967	10.5	7.5	2.253	1.501	**	**	**	**
31501 COLIFORM,TOT, MEMBRANE FILTER,IMMED.M-ENDO MED,35C	11/26/73-03/11/74	4	6183.5	6077.	7950.	3991.	2938851.333	1714.308	**	**	**	**
31501 LOG COLIFORM,TOT, MEMBRANE FILTER,IMMED.M-ENDO MED,	11/26/73-03/11/74	4	3.789	3.77	3.9	3.601	0.017	0.13	**	**	**	**
31501 GM COLIFORM,TOT, MEMBRANE FILTER,IMMED.M-ENDO MED,3	GEOMETRIC MEAN =			5883.62								
31505 COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	03/13/73-05/13/74	5	2400.	6272.	24000.	150.	101574170.	10078.401	**	**	**	**
31505 LOG COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 3150	03/13/73-05/13/74	5	3.38	3.184	4.38	2.176	0.864	0.93	**	**	**	**
31505 GM COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506	GEOMETRIC MEAN =			1528.615								
31615 FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	03/13/73-12/02/74	11	150.	1419.364	11000.	23.	10580590.455	3252.782	24.4	90.	930.	9280.
31615 LOG FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	03/13/73-12/02/74	11	2.176	2.431	4.041	1.362	0.632	0.795	1.385	1.954	2.968	3.909
31615 GM FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	GEOMETRIC MEAN =			269.488								
31616 FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/04/73-06/24/74	6	521.5	1131.	4133.	0.	2523232.4	1588.469	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0013

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/04/73-06/24/74	6	2.678	2.146	3.616	0.	2.124	1.457	**	**	**	**
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			140.022								
31678 FECAL STREPTOCOCCI, MPN, AD-EVA, TUBE CONFIGURATION	06/20/73-07/23/73	2	840.	840.	930.	750.	16200.	127.279	**	**	**	**
31678 LOG FECAL STREPTOCOCCI, MPN, AD-EVA, TUBE CONFIGURATION	06/20/73-07/23/73	2	2.922	2.922	2.968	2.875	0.004	0.066	**	**	**	**
31678 GM FECAL STREPTOCOCCI, MPN, AD-EVA, TUBE CONFIGURATION	GEOMETRIC MEAN =			835.165								
31679 FECAL STREPTOCOCCI, MF M-ENTEROCOCCUS AGAR, 35C, 48H	12/04/73-04/16/74	5	47.	79.8	190.	29.	4291.7	65.511	**	**	**	**
31679 LOG FECAL STREPTOCOCCI, MF M-ENTEROCOCCUS AGAR, 35C,	12/04/73-04/16/74	5	1.672	1.801	2.279	1.462	0.102	0.319	**	**	**	**
31679 GM FECAL STREPTOCOCCI, MF M-ENTEROCOCCUS AGAR, 35C, 4	GEOMETRIC MEAN =			63.273								
71846 NITROGEN, AMMONIA, DISSOLVED (MG/L AS NH4)	09/04/73-12/30/74	70	0.28	0.406	2.4	0.02	0.19	0.436	0.08	0.18	0.423	0.953
71851 NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	09/04/73-12/30/74	71	6.7	8.386	25.	1.8	23.007	4.797	3.22	4.7	12.	15.
71856 NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	09/04/73-12/30/74	71	0.2	0.29	4.1	0.	0.24	0.49	0.06	0.1	0.33	0.454

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0013

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	94	0	0.00	41	0	0.00	31	0	0.00	22	0	0.00			
00400 PH	Other-Hi Lim.	9.	62	0	0.00	20	0	0.00	22	0	0.00	20	0	0.00			
	Other-Lo Lim.	6.5	62	8	0.13	20	4	0.20	22	4	0.18	20	0	0.00			
00613 NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	71	1	0.01	36	0	0.00	17	0	0.00	18	1	0.06			
00615 NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	28	0	0.00	6	0	0.00	15	0	0.00	7	0	0.00			
00618 NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	71	0	0.00	36	0	0.00	17	0	0.00	18	0	0.00			
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	28	0	0.00	6	0	0.00	15	0	0.00	7	0	0.00			
31501 COLIFORM, TOTAL, MEMBRANE FILTER, IMMED.	Other-Hi Lim.	1000.	4	4	1.00	4	4	1.00									
31505 COLIFORM, TOTAL, MPN, CONF. TEST, 35C	Other-Hi Lim.	1000.	5	3	0.60	1	0	0.00	3	2	0.67	1	1	1.00			
31615 FECAL COLIFORM, MPN	Other-Hi Lim.	200.	11	5	0.45	3	1	0.33	4	2	0.50	4	2	0.50			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	6	4	0.67	3	3	1.00	3	1	0.33						
71851 NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	71	0	0.00	36	0	0.00	17	0	0.00	18	0	0.00			
71856 NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	71	1	0.01	36	0	0.00	17	0	0.00	18	1	0.06			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0014

NPS Station ID: MANA0014  
 Location: BULL RUN ORDWAY RD  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC R BASIN  
 RF1 Index: 02070010052  
 RF3 Index: 02070010005304.31  
 Description:

LAT/LON: 38.795837/ -77.466670

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 5.940  
 RF3 Mile Point: 4.30

Agency: 31POTOMA  
 FIPS State/County: 51059 VIRGINIA/FAIRFAX  
 STORET Station ID(s): 101067 /SITE 32  
 Within Park Boundary: No

Date Created: / /

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.02

On/Off RF1: OFF  
 On/Off RF3:

## Parameter Inventory for Station: MANA0014

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/22/73-06/29/73	3	18.	14.667	24.	2.	129.333	11.372	**	**	**
00075	TURBIDITY, HELIGE (PPM AS SILICON DIOXIDE)	02/22/73-06/29/73	3	8.	8.633	10.	7.9	1.403	1.185	**	**	**
00300	OXYGEN, DISSOLVED MG/L	02/22/73-06/29/73	3	6.7	8.133	11.3	6.4	7.543	2.747	**	**	**
00310	BOD, 5 DAY, 20 DEG C MG/L	02/22/73-06/29/73	4	2.55	2.875	5.1	1.3	2.749	1.658	**	**	**
00400	PH (STANDARD UNITS)	02/22/73-06/29/73	3	7.5	7.767	8.5	7.3	0.413	0.643	**	**	**
00400	CONVERTED PH (STANDARD UNITS)	02/22/73-06/29/73	3	7.5	7.548	8.5	7.3	0.485	0.696	**	**	**
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/22/73-06/29/73	3	0.032	0.028	0.05	0.003	0.001	0.024	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/22/73-06/29/73	4	7.	9.25	18.	5.	35.583	5.965	**	**	**
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/22/73-05/23/73	3	0.8	0.7	1.3	0.	0.43	0.656	**	**	**
00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	02/22/73-05/23/73	3	0.	1.047	3.14	0.	3.287	1.813	**	**	**
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	02/22/73-03/22/73	2	1.75	1.75	2.3	1.2	0.605	0.778	**	**	**
00650	PHOSPHATE, TOTAL (MG/L AS PO4)	02/22/73-03/22/73	2	0.34	0.34	0.36	0.32	0.001	0.028	**	**	**
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	05/23/73-06/29/73	2	1.54	1.54	1.68	1.4	0.039	0.198	**	**	**
31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	02/22/73-06/29/73	3	60.	520.	1500.	0.	721200.	849.235	**	**	**
31615	LOG FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	02/22/73-06/29/73	3	1.778	1.651	3.176	0.	2.534	1.592	**	**	**
31615	GM FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	GEOMETRIC MEAN =		44.814								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

## EPA Water Quality Criteria Analysis for Station: MANA0014

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00300	OXYGEN, DISSOLVED	Other-Lo Lim.	4.	3	0	0.00	1	0	0.00	2	0	0.00					
00400	PH	Other-Hi Lim.	9.	3	0	0.00	1	0	0.00	2	0	0.00					
		Other-Lo Lim.	6.5	3	0	0.00	1	0	0.00	2	0	0.00					
00620	NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	3	0	0.00	1	0	0.00	2	0	0.00					
31615	FECAL COLIFORM, MPN	Other-Hi Lim.	200.	3	1	0.33	1	0	0.00	2	1	0.50					

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0015

NPS Station ID: MANA0015  
 Location: RT. 1501  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: 02-NORTH ATLANTIC  
 Minor Basin: 1-POTOMAC-SHENANDOAH  
 RF1 Index: 02070010  
 RF3 Index: 02070010059601.50

LAT/LON: 38.790004/ -77.476116

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 4.50

Agency: 21VASWCB  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): 1AXAC000.09  
 Within Park Boundary: No

Date Created: 01/13/96

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.21

On/Off RF1:  
 On/Off RF3:

DESCRIPTION: VIRGINIA STATE WATER CONTROL BOARD AMBIENT MONITORING BASIN: 1A POTOMAC REGION: 3 NORTHERN  
 RIVER: TRIB. FLAT BRANCH SECTION: 07A TOPO MAP #: 0028 TOPO MAP NAME: MANASSAS, VA

### Parameter Inventory for Station: MANA0015

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/06/77-04/18/83	2	11.25	11.25	12.	10.5	1.125	1.061	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	07/08/76-04/18/83	3	9.6	9.233	11.7	6.4	7.123	2.669	**	**	**	**
00310 BOD, 5 DAY, 20 DEG C MG/L	07/08/76-04/18/83	3	9.	6.667	10.	1.	24.333	4.933	**	**	**	**
00340 COD, .25N K2CR2O7 MG/L	07/08/76-04/18/83	3	33.	29.	42.	12.	237.	15.395	**	**	**	**
00400 PH (STANDARD UNITS)	07/08/76-04/18/83	3	7.4	7.433	7.6	7.3	0.023	0.153	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	07/08/76-04/18/83	3	7.4	7.416	7.6	7.3	0.024	0.154	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	07/08/76-04/18/83	3	0.04	0.038	0.05	0.025	0.	0.013	**	**	**	**
00403 PH, LAB, STANDARD UNITS SU	04/06/77-04/18/83	2	7.6	7.6	7.7	7.5	0.02	0.141	**	**	**	**
00403 CONVERTED PH, LAB, STANDARD UNITS	04/06/77-04/18/83	2	7.589	7.589	7.7	7.5	0.02	0.142	**	**	**	**
00403 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/06/77-04/18/83	2	0.026	0.026	0.032	0.02	0.	0.008	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	04/06/77-04/18/83	2	44.	44.	52.	36.	128.	11.314	**	**	**	**
00500 RESIDUE, TOTAL (MG/L)	07/08/76-04/18/83	3	318.	336.667	547.	145.	40662.333	201.649	**	**	**	**
00505 RESIDUE, TOTAL VOLATILE (MG/L)	07/08/76-04/18/83	3	111.	88.333	114.	40.	1754.333	41.885	**	**	**	**
00510 RESIDUE, TOTAL FIXED (MG/L)	07/08/76-04/18/83	3	207.	248.333	433.	105.	28177.333	167.861	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	07/08/76-04/18/83	3	10.	10.	14.	6.	16.	4.	**	**	**	**
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	07/08/76-04/18/83	3	6.	4.667	6.	2.	5.333	2.309	**	**	**	**
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	07/08/76-04/18/83	3	8.	5.333	8.	0.	21.333	4.619	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	07/08/76-04/18/83	3	2.8	2.65	5.1	0.05	6.393	2.528	**	**	**	**
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	07/08/76-04/18/83	3	0.24	0.715	1.9	0.005	1.067	1.033	**	**	**	**
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	07/08/76-04/18/83	3	1.4	3.267	7.6	0.8	14.173	3.765	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	07/08/76-04/18/83	3	4.1	3.683	6.6	0.35	9.896	3.146	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	07/08/76-04/18/83	3	1.5	1.083	1.7	0.05	0.811	0.9	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	07/08/76-04/18/83	3	1.	0.787	1.3	0.06	0.419	0.647	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	07/08/76-04/18/83	3	15.	12.	16.	5.	37.	6.083	**	**	**	**
01002 ARSENIC, TOTAL (UG/L AS AS)	04/18/83-04/18/83	1 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
01027 CADMIUM, TOTAL (UG/L AS CD)	04/18/83-04/18/83	1 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
01034 CHROMIUM, TOTAL (UG/L AS CR)	04/18/83-04/18/83	1 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
01042 COPPER, TOTAL (UG/L AS CU)	04/18/83-04/18/83	1	10.	10.	10.	10.	0.	0.	**	**	**	**
01051 LEAD, TOTAL (UG/L AS PB)	04/18/83-04/18/83	1	2.	2.	2.	2.	0.	0.	**	**	**	**
01055 MANGANESE, TOTAL (UG/L AS MN)	04/18/83-04/18/83	1	110.	110.	110.	110.	0.	0.	**	**	**	**
01067 NICKEL, TOTAL (UG/L AS NI)	04/18/83-04/18/83	1	10.	10.	10.	10.	0.	0.	**	**	**	**
01092 ZINC, TOTAL (UG/L AS ZN)	04/18/83-04/18/83	1	40.	40.	40.	40.	0.	0.	**	**	**	**
31506 COLIFORM,TOT,MPN, CONFIRMED TEST, TUBE CONFIG.	04/06/77-04/06/77	1	110000.	110000.	110000.	110000.	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0015

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
31506 LOG COLIFORM,TOT.MPN, CONFIRMED TEST, TUBE CONFIG.	04/06/77-04/06/77	1	5.041	5.041	5.041	5.041	0.	0.	**	**	**	**
31506 GM COLIFORM,TOT.MPN, CONFIRMED TEST, TUBE CONFIG.	GEOMETRIC MEAN =			110000.								
31616 FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/06/77-04/18/83	2	3850.	3850.	7500.	200.	26645000.	5161.88	**	**	**	**
31616 LOG FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/06/77-04/18/83	2	3.088	3.088	3.875	2.301	1.239	1.113	**	**	**	**
31616 GM FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	GEOMETRIC MEAN =			1224.745								
71900 MERCURY, TOTAL (UG/L AS HG)	04/18/83-04/18/83	1 ##	0.15	0.15	0.15	0.15	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0015

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	3	0	0.00				3	0	0.00						
00400 PH	Other-Hi Lim.	9.	3	0	0.00				3	0	0.00						
	Other-Lo Lim.	6.5	3	0	0.00				3	0	0.00						
00403 PH, LAB	Other-Hi Lim.	9.	2	0	0.00				2	0	0.00						
	Other-Lo Lim.	6.5	2	0	0.00				2	0	0.00						
00615 NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	3	1	0.33				3	1	0.33						
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	3	0	0.00				3	0	0.00						
01002 ARSENIC, TOTAL	Fresh Acute	360.	1	0	0.00				1	0	0.00						
	Drinking Water	50.	1	0	0.00				1	0	0.00						
01027 CADMIUM, TOTAL	Fresh Acute	3.9	1	0	0.00				1	0	0.00						
	Drinking Water	5.	1	0	0.00				1	0	0.00						
01034 CHROMIUM, TOTAL	Drinking Water	100.	1	0	0.00				1	0	0.00						
01042 COPPER, TOTAL	Fresh Acute	18.	1	0	0.00				1	0	0.00						
	Drinking Water	1300.	1	0	0.00				1	0	0.00						
01051 LEAD, TOTAL	Fresh Acute	82.	1	0	0.00				1	0	0.00						
	Drinking Water	15.	1	0	0.00				1	0	0.00						
01067 NICKEL, TOTAL	Fresh Acute	1400.	1	0	0.00				1	0	0.00						
	Drinking Water	100.	1	0	0.00				1	0	0.00						
01092 ZINC, TOTAL	Fresh Acute	120.	1	0	0.00				1	0	0.00						
	Drinking Water	5000.	1	0	0.00				1	0	0.00						
31506 COLIFORM, TOTAL, MPN, CONF. TEST, TUBE C	Other-Hi Lim.	1000.	1	1	1.00				1	1	1.00						
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	2	2	1.00				2	2	1.00						
71900 MERCURY, TOTAL	Fresh Acute	2.4	1	0	0.00				1	0	0.00						
	Drinking Water	2.	1	0	0.00				1	0	0.00						

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0016

NPS Station ID: MANA0016      LAT/LON: 38.789170/ -77.478059

Location: RT. 1501 BRIDGE(PRINCE WM.CO-MANASSAS TOWN)

Station Type: /TYPA/AMBNT/STREAM

RMI-Indexes:

RMI-Miles:

HUC: 02070010

Major Basin: 02-NORTH-ATLANTIC

Minor Basin: 1-POTOMAC-SHENANDOAH

RF1 Index: 02070010054

RF3 Index: 02070010005802.72

Description:

VIRGINIA STATE WATER CONTROL BOARD

RIVER: FLAT BRANCH

Depth of Water: 0

Elevation: 0

RF1 Mile Point: 0.310

RF3 Mile Point: 2.72

Agency: 21VASWCB

FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM

STORET Station ID(s): 1AFLB000.64 /VA1A07AX0037/VA1A3X0037

Within Park Boundary: No

Aquifer:

Water Body Id:

ECO Region:

Distance from RF1: 8.10

Distance from RF3: 0.37

Date Created: / /

On/Off RF1: OFF

On/Off RF3:

AMBIENT MONITORING

BASIN: 1A POTOMAC

REGION: 3 NORTHERN VIRGINIA

SECTION: 07A

TOPO MAP #: 0028

TOPO MAP NAME: MANASSAS, VA

### Parameter Inventory for Station: MANA0016

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	11/19/74-05/09/79	23	13.3	14.361	32.	0.5	92.697	9.628	0.76	6.1	22.2	27.48
00077 TRANSPARENCY, SECCHI DISC (INCHES)	05/01/75-05/01/75	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	11/19/74-05/09/79	22	8.9	9.173	17.8	4.6	8.98	2.997	5.45	7.	10.9	12.99
00310 BOD, 5 DAY, 20 DEG C MG/L	03/14/75-05/09/79	19	7.	7.579	20.	1.	26.368	5.135	2.	4.	9.	17.
00400 PH (STANDARD UNITS)	11/19/74-05/09/79	23	7.7	7.748	9.5	7.	0.287	0.536	7.3	7.5	7.8	8.66
00400 CONVERTED PH (STANDARD UNITS)	11/19/74-05/09/79	23	7.7	7.565	9.5	7.	0.322	0.568	7.3	7.5	7.8	8.66
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	11/19/74-05/09/79	23	0.02	0.027	0.1	0.	0.	0.021	0.002	0.016	0.032	0.05
00500 RESIDUE, TOTAL (MG/L)	03/14/75-07/02/75	3	633.	722.	1187.	346.	182761.	427.506	**	**	**	**
00505 RESIDUE, TOTAL VOLATILE (MG/L)	03/14/75-07/02/75	3	84.	84.667	99.	71.	196.333	14.012	**	**	**	**
00510 RESIDUE, TOTAL FIXED (MG/L)	03/14/75-07/02/75	3	534.	637.333	1116.	262.	190337.333	436.277	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	03/14/75-05/09/79	20	11.	57.45	916.	1.	40890.155	202.213	2.2	8.	18.	27.6
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	03/14/75-05/09/79	20	6.	9.	64.	0.	184.105	13.569	1.1	4.	8.	19.
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	03/14/75-05/09/79	20	4.	48.45	852.	0.	35804.05	189.22	0.1	3.25	9.25	21.6
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	11/19/74-05/09/79	21	4.099	4.757	12.5	0.05	15.465	3.933	0.06	1.1	7.5	11.
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	11/19/74-05/09/79	23	0.7	0.928	2.549	0.005	0.762	0.873	0.005	0.15	1.799	2.249
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	11/19/74-09/28/76	11	3.799	4.348	8.589	0.8	6.927	2.632	1.01	2.099	6.449	8.471
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	11/19/74-05/09/79	21	7.	6.469	13.59	0.3	16.309	4.038	0.52	2.899	9.3	12.11
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	11/22/76-05/09/79	11	2.1	2.549	6.5	0.025	2.916	1.708	0.2	1.61	3.4	5.98
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	03/14/75-05/09/79	19	16.	15.684	26.	6.	24.784	4.978	7.	13.	19.	21.
01002 ARSENIC, TOTAL (UG/L AS AS)	03/15/77-03/15/77	1 ##	1.	1.	1.	1.	0.	0.	**	**	**	**
01027 CADMIUM, TOTAL (UG/L AS CD)	05/01/75-05/01/75	1 ##	16.5	16.5	16.5	16.5	0.	0.	**	**	**	**
01034 CHROMIUM, TOTAL (UG/L AS CR)	05/01/75-03/15/77	2 ##	7.5	7.5	10.	5.	12.5	3.536	**	**	**	**
01042 COPPER, TOTAL (UG/L AS CU)	05/01/75-03/15/77	2 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01051 LEAD, TOTAL (UG/L AS PB)	05/01/75-03/15/77	2	7.	7.	10.	4.	18.	4.243	**	**	**	**
01065 NICKEL, DISSOLVED (UG/L AS NI)	05/01/75-03/15/77	2 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
01092 ZINC, TOTAL (UG/L AS ZN)	05/01/75-03/15/77	2 ##	17.5	17.5	30.	5.	312.5	17.678	**	**	**	**
31505 COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	05/01/75-06/30/77	11	290.	9092.727	46000.	15.	237806836.818	15420.987	15.	90.	24000.	41600.
31505 LOG COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 3150	05/01/75-06/30/77	11	2.462	2.848	4.663	1.176	1.585	1.259	1.176	1.954	4.38	4.606
31505 GM COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506	GEOMETRIC MEAN =			705.25								
31616 FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	11/19/74-05/09/79	22 ##	50.	777.045	9300.	15.	5230522.998	2287.034	15.	47.5	92.5	4425.
31616 LOG FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	11/19/74-05/09/79	22 ##	1.699	1.928	3.968	1.176	0.523	0.723	1.176	1.675	1.966	3.507
31616 GM FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	GEOMETRIC MEAN =			84.794								
50060 CHLORINE, TOTAL RESIDUAL (MG/L)	11/19/74-05/09/79	14	0.65	0.614	1.8	0.	0.235	0.485	0.	0.225	0.725	1.5

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0016

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
70505 PHOSPHATE, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	11/19/74-05/09/79	23	2.5	2.652	6.	0.05	2.857	1.69	0.07	1.4	4.	5.
70507 PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	11/19/74-05/09/79	23	2.	2.321	5.	0.05	2.756	1.66	0.112	1.099	3.799	4.8
71900 MERCURY, TOTAL (UG/L AS HG)	05/01/75-03/15/77	2	2.25	2.25	3.6	0.9	3.645	1.909	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0016

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	22	0	0.00	10	0	0.00	9	0	0.00	3	0	0.00			
00400 PH	Other-Hi Lim.	9.	23	1	0.04	10	0	0.00	10	1	0.10	3	0	0.00			
	Other-Lo Lim.	6.5	23	0	0.00	10	0	0.00	10	0	0.00	3	0	0.00			
00615 NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	23	9	0.39	10	1	0.10	10	5	0.50	3	3	1.00			
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	11	0	0.00	6	0	0.00	3	0	0.00	2	0	0.00			
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	11	0	0.00	4	0	0.00	7	0	0.00						
01002 ARSENIC, TOTAL	Fresh Acute	360.	1	0	0.00				1	0	0.00						
	Drinking Water	50.	1	0	0.00				1	0	0.00						
01027 CADMIUM, TOTAL	Fresh Acute	3.9	0 &	0	0.00												
	Drinking Water	5.	0 &	0	0.00												
01034 CHROMIUM, TOTAL	Drinking Water	100.	2	0	0.00				2	0	0.00						
01042 COPPER, TOTAL	Fresh Acute	18.	2	0	0.00				2	0	0.00						
	Drinking Water	1300.	2	0	0.00				2	0	0.00						
01051 LEAD, TOTAL	Fresh Acute	82.	2	0	0.00				2	0	0.00						
	Drinking Water	15.	2	0	0.00				2	0	0.00						
01065 NICKEL, DISSOLVED	Fresh Acute	1400.	2	0	0.00				2	0	0.00						
	Drinking Water	100.	2	0	0.00				2	0	0.00						
01092 ZINC, TOTAL	Fresh Acute	120.	2	0	0.00				2	0	0.00						
	Drinking Water	5000.	2	0	0.00				2	0	0.00						
31505 COLIFORM, TOTAL, MPN, CONF. TEST, 35C	Other-Hi Lim.	1000.	11	4	0.36	4	0	0.00	5	3	0.60	2	1	0.50			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	22	3	0.14	10	1	0.10	10	1	0.10	2	1	0.50			
50060 CHLORINE, TOTAL RESIDUAL	Fresh Acute	0.019	14	11	0.79	7	6	0.86	4	2	0.50	3	3	1.00			
71900 MERCURY, TOTAL	Fresh Acute	2.4	2	1	0.50				2	1	0.50						
	Drinking Water	2.	2	1	0.50				2	1	0.50						

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0017

NPS Station ID: MANA0017  
 Location: BULL RUN BALL'S FORD  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC RIVER  
 RF1 Index: 02070010  
 RF3 Index: 02070010059601.50  
 Description:

LAT/LON: 38.811587/ -77.492115

Depth of Water: 0  
 Elevation: 158

RF1 Mile Point: 0.000  
 RF3 Mile Point: 4.50

Agency: 11NPSWRD  
 FIPS State/County: 51059 VIRGINIA/FAIRFAX  
 STORET Station ID(s): MANA\_10  
 Within Park Boundary: Yes

Date Created: 06/22/96

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.21

On/Off RF1:  
 On/Off RF3:

BULL RUN AS IT EXITS THE PARK AT BALL'S FORD. SITE IS LOCATED ON THE MANASSAS VA 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE. IT IS THE RESPONSIBILITY OF MANASSAS NATIONAL BATTLEFIELD PARK - 6511 SUDLEY ROAD - MANASSAS VIRGINIA 22110 PH.(703)754-1861. FOR MORE INFORMATION CONTACT BARBARA MAULLER - RESOURCE MANAGEMENT - AT MANASSAS NATIONAL BATTLEFIELD PARK. DATA PROCESSED AND UPLOADED TO STORET BY RANDY SIDDENS AT NATIONAL PARK SERVICE WATER RESOURCE DIVISION IN FORT COLLINS COLORADO PH.(970)225-3556 FAX (970)225-9965.

### Parameter Inventory for Station: MANA0017

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	133	15.	15.187	30.	-3.	70.3	8.385	4.82	9.05	22.9	25.76
00020 TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	11	20.	18.273	28.	6.	46.668	6.831	6.9	13.	21.5	28.
00045 PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	20	0.	0.132	1.62	0.	0.13	0.361	0.	0.	0.078	0.283
00061 FLOW, STREAM, INSTANTANEOUS CFS	04/12/87-11/01/90	20	28.5	67.7	446.	2.	10774.537	103.8	2.3	10.	78.75	222.
00064 DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	25	0.5	0.668	2.4	0.1	0.301	0.548	0.2	0.3	0.8	1.52
00094 SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	133	160.	265.293	1669.	70.	57505.179	239.802	100.	120.	318.	633.
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	132	11.15	10.574	15.5	3.8	7.913	2.813	6.7	8.5	13.	14.07
00406 PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	133	7.3	7.293	8.79	5.8	0.258	0.508	6.64	7.	7.6	7.9
00406 CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	133	7.3	6.973	8.79	5.8	0.362	0.601	6.64	7.	7.6	7.9
00406 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	133	0.05	0.106	1.585	0.002	0.039	0.198	0.013	0.025	0.1	0.231
00480 SALINITY - PARTS PER THOUSAND	03/21/87-11/01/90	38	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	95	3.	9.864	120.	0.	489.432	22.123	0.1	1.	8.	18.4
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	5	0.48	1.936	7.15	0.39	8.612	2.935	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	2	0.505	0.505	0.55	0.46	0.004	0.064	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	39	13.	40.205	260.	0.	4036.062	63.53	0.	0.	50.	120.
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	39	1.114	1.001	2.415	0.	0.686	0.828	0.	0.	1.699	2.079
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			10.015								
82079 TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	129	9.2	26.889	213.	0.1	1301.921	36.082	1.4	3.45	33.25	90.
85663 FLOW, RATE FT/SEC	01/23/92-11/13/94	52	1.175	1.146	3.9	0.06	0.547	0.74	0.18	0.6	1.5	1.87

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot



### EPA Water Quality Criteria Analysis for Station: MANA0017

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	132	1	0.01	39	1	0.03	62	0	0.00	31	0	0.00			
00406 PH, FIELD	Other-Hi Lim.	9.	133	0	0.00	40	0	0.00	62	0	0.00	31	0	0.00			
	Other-Lo Lim.	6.5	133	8	0.06	40	3	0.08	62	2	0.03	31	3	0.10			
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	5	0	0.00	1	0	0.00	1	0	0.00	3	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	39	2	0.05	15	1	0.07	15	1	0.07	9	0	0.00			
82079 TURBIDITY, LAB	Other-Hi Lim.	50.	129	27	0.21	36	1	0.03	62	17	0.27	31	9	0.29			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### Annual Analysis for 1982 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	3	9.5	6.667	10.	0.5	28.583	5.346	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	3	180.	170.	190.	140.	700.	26.458	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	3	11.2	11.9	13.7	10.8	2.47	1.572	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	3	7.	7.133	7.4	7.	0.053	0.231	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	3	7.	7.097	7.4	7.	0.055	0.235	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	3	0.1	0.08	0.1	0.04	0.001	0.035	**	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	3	6.	5.	7.	2.	7.	2.646	**	**	**	**
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	3	7.2	13.733	32.	2.	257.013	16.032	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1983 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	12	7.	9.1	22.	0.	50.42	7.101	0.15	4.775	16.5	20.95
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	12	115.	126.667	170.	100.	587.879	24.246	100.	110.	147.5	167.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	12	11.25	11.183	14.2	8.1	3.238	1.799	8.37	9.575	12.05	14.05
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	12	7.05	7.05	7.6	6.2	0.146	0.383	6.35	6.775	7.375	7.54
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	12	7.047	6.868	7.6	6.2	0.183	0.427	6.35	6.775	7.375	7.54
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	12	0.09	0.136	0.631	0.025	0.028	0.166	0.03	0.042	0.175	0.502
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	12	2.5	8.592	44.	0.05	162.291	12.739	0.05	2.	13.	36.8
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	12	9.2	18.492	58.	2.6	419.777	20.488	2.81	3.75	31.125	57.7

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1984 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	25	12.	12.28	27.	-3.	86.481	9.3	3.8	7.25	20.5	25.2
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	25	130.	156.08	750.	100.	15866.243	125.961	103.	110.	155.	174.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	24	10.55	10.496	15.	7.	5.545	2.355	7.85	8.425	11.925	14.35
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	25	7.2	7.228	7.8	6.6	0.077	0.278	6.86	7.05	7.4	7.6
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	25	7.2	7.141	7.8	6.6	0.085	0.291	6.86	7.05	7.4	7.6
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	25	0.063	0.072	0.251	0.016	0.003	0.051	0.025	0.04	0.09	0.139
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	25	1.	1.996	6.	0.05	3.776	1.943	0.08	0.45	3.	5.4
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	25	5.	7.944	25.	0.4	53.228	7.296	1.28	2.2	12.25	21.7

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1985 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	3	7.	7.267	11.8	3.	19.413	4.406	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	3	100.	96.667	110.	80.	233.333	15.275	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	3	12.6	12.5	13.	11.9	0.31	0.557	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	3	7.2	7.1	7.3	6.8	0.07	0.265	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	3	7.2	7.043	7.3	6.8	0.075	0.274	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	3	0.063	0.091	0.158	0.05	0.004	0.059	**	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	3	4.	3.533	6.	0.6	7.453	2.73	**	**	**	**
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	3	0.3	0.267	0.4	0.1	0.023	0.153	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1987 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	23	23.	21.	30.	7.	45.273	6.729	10.	14.	25.	29.6
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	23	150.	231.522	800.	70.	37464.625	193.558	81.	125.	270.	580.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	23	14.	14.039	15.5	13.2	0.305	0.552	13.32	13.6	14.3	14.82
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	23	7.52	7.608	8.4	7.2	0.093	0.305	7.282	7.38	7.8	8.156
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	23	7.52	7.528	8.4	7.2	0.1	0.316	7.282	7.38	7.8	8.156
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	23	0.03	0.03	0.063	0.004	0.	0.016	0.008	0.016	0.042	0.052
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	23	90.	87.217	98.	40.	131.178	11.453	77.6	88.	92.	96.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1988 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	11	19.	19.727	26.	11.	32.018	5.658	11.	16.	25.	26.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	11	365.	339.818	600.	83.	37832.364	194.505	88.4	130.	485.	600.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	11	12.	12.236	14.2	11.3	0.769	0.877	11.34	11.7	12.2	14.08
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	11	7.87	7.685	8.14	7.2	0.098	0.312	7.22	7.4	7.9	8.102
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	11	7.87	7.584	8.14	7.2	0.109	0.33	7.22	7.4	7.9	8.102
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	11	0.013	0.026	0.063	0.007	0.	0.019	0.008	0.013	0.04	0.061
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	11	28.	49.818	213.	16.	3392.964	58.249	16.	16.	60.	187.2

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1990 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	4	12.5	13.75	19.	11.	12.75	3.571	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	4	157.	160.5	225.	103.	3179.667	56.389	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	4	5.85	5.575	6.8	3.8	1.683	1.297	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	4	7.47	7.323	8.	6.35	0.494	0.703	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	4	7.451	6.88	8.	6.35	0.755	0.869	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	4	0.035	0.132	0.447	0.01	0.044	0.21	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1992 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	12	13.	13.225	22.8	3.	38.951	6.241	4.35	8.05	18.75	22.32
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	12	227.5	270.667	584.	120.	20342.788	142.628	123.9	179.	307.5	562.1
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	12	8.8	9.092	11.6	6.9	2.63	1.622	6.99	7.925	10.925	11.48
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	12	7.3	7.354	7.9	7.01	0.086	0.292	7.031	7.108	7.615	7.87
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	12	7.3	7.279	7.9	7.01	0.092	0.303	7.031	7.107	7.615	7.87
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	12	0.05	0.053	0.098	0.013	0.001	0.027	0.014	0.026	0.078	0.093
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	12	8.5	9.375	24.	1.	52.097	7.218	1.45	2.5	14.75	22.5
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	12	8.6	8.6	18.	2.5	16.14	4.017	2.65	6.575	10.5	15.81

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1993 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	21	18.8	17.052	28.6	1.4	74.269	8.618	3.04	10.25	24.4	28.44
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	21	201.	395.81	870.	116.	90121.562	300.203	132.2	149.	724.5	860.8
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	21	7.2	7.786	13.	4.3	6.911	2.629	4.44	5.55	9.35	12.08
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	21	7.09	7.295	8.79	5.98	0.707	0.841	6.096	6.655	7.955	8.684
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	21	7.09	6.715	8.79	5.98	1.06	1.03	6.096	6.655	7.955	8.684
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	21	0.081	0.193	1.047	0.002	0.087	0.295	0.002	0.011	0.223	0.818
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	21	7.	14.571	116.	1.	790.857	28.122	1.	1.	11.	63.6
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	21	5.	7.871	37.	1.2	97.315	9.865	1.3	1.55	8.95	29.6

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

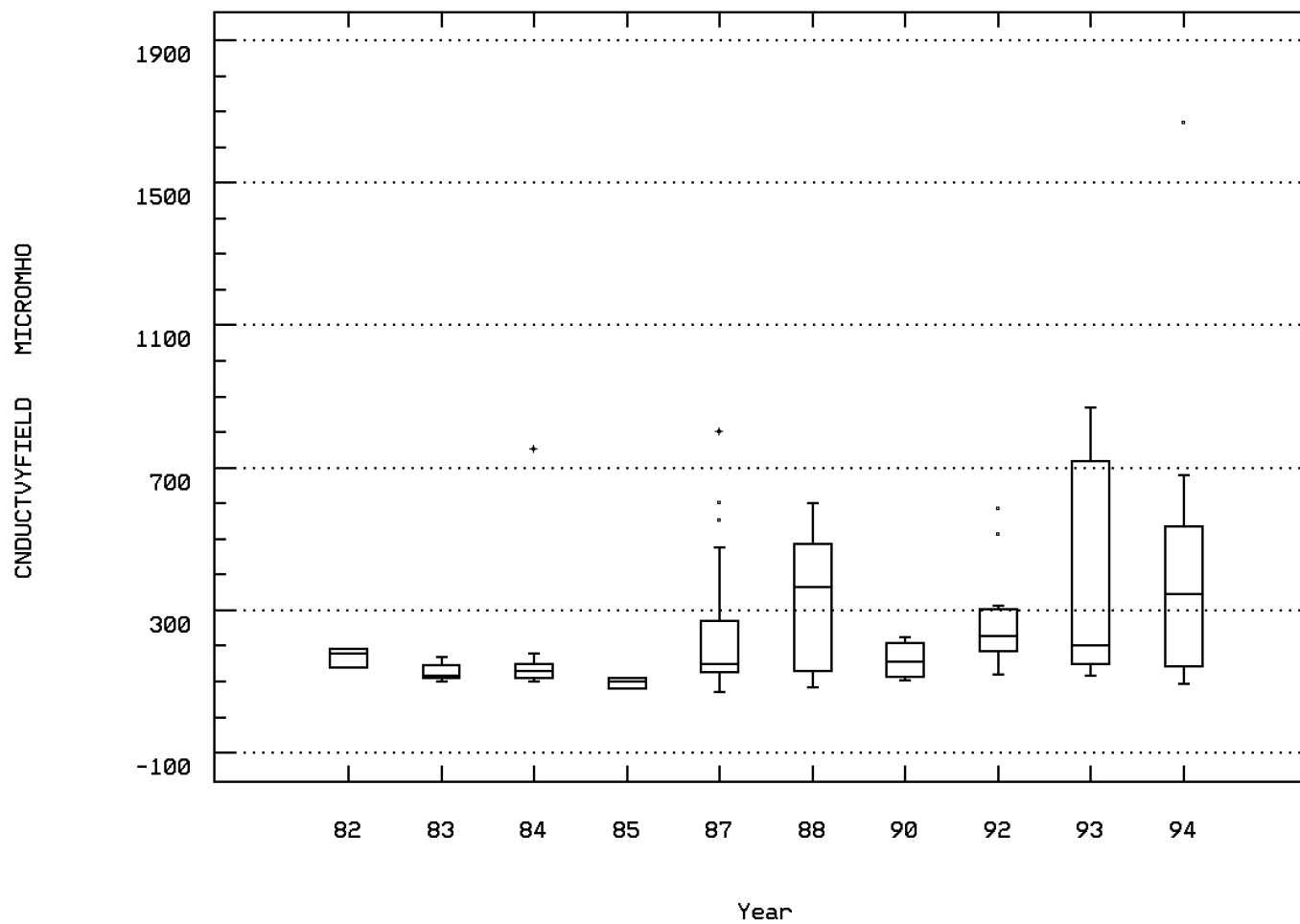
### Annual Analysis for 1994 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	19	15.	15.268	28.3	3.	60.651	7.788	3.	9.	22.2	25.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	19	344.	410.368	1669.	92.	135151.023	367.629	97.	144.	534.	680.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	19	9.4	9.689	13.	6.7	2.739	1.655	7.8	8.9	10.4	12.2
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	19	7.	6.932	7.4	5.8	0.183	0.428	6.3	6.6	7.4	7.4
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	19	7.	6.673	7.4	5.8	0.254	0.504	6.3	6.6	7.4	7.4
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	19	0.1	0.213	1.585	0.04	0.124	0.352	0.04	0.04	0.251	0.501
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	19	4.	17.895	120.	0.	1347.766	36.712	0.	2.	10.	120.
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	19	3.9	9.668	33.5	0.4	116.533	10.795	1.3	2.5	14.5	31.9

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0017 Parameter Code: 00094

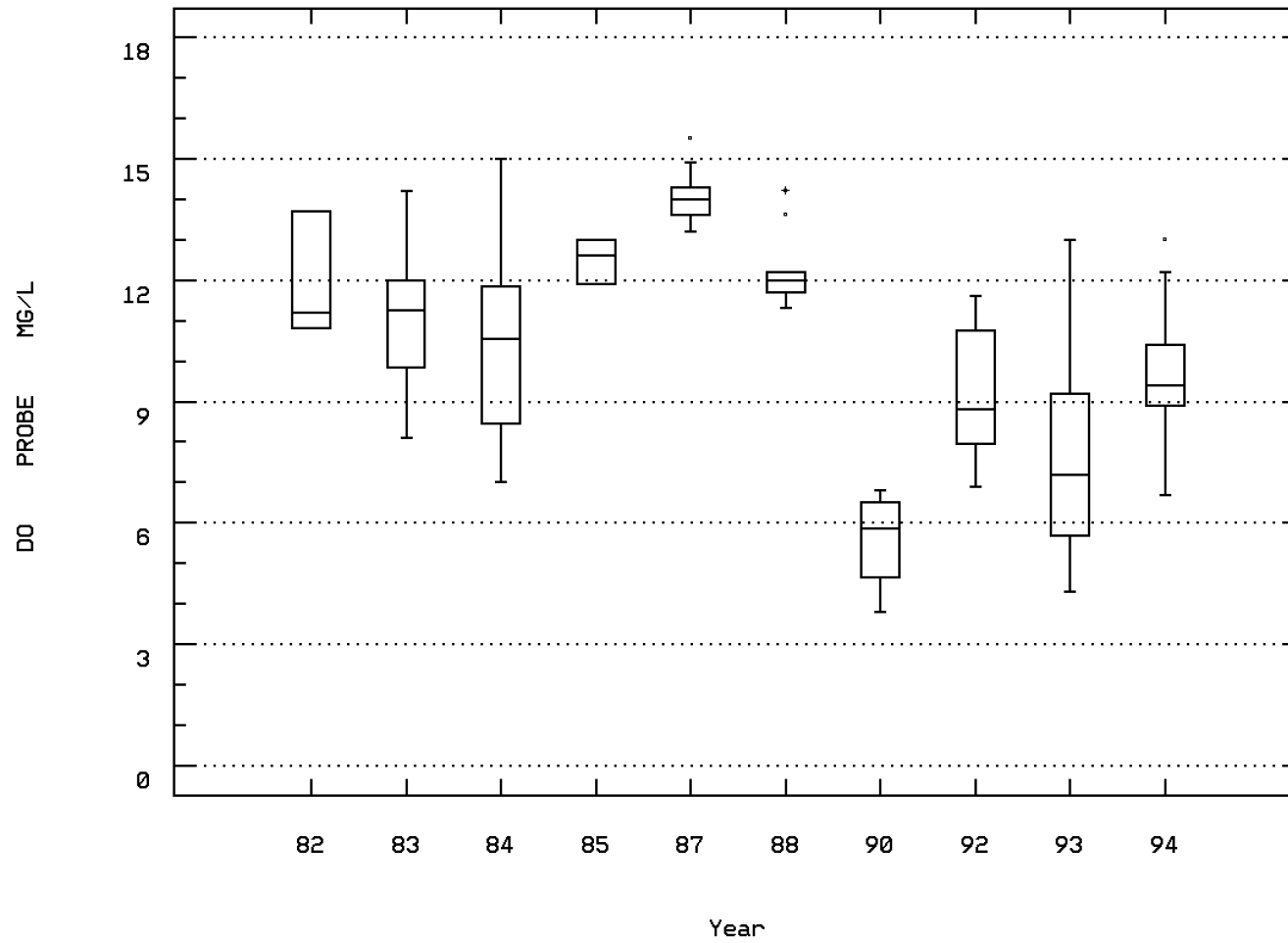
SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @



BULL RUN BALL'S FORD

Station: MANA0017 Parameter Code: 00299

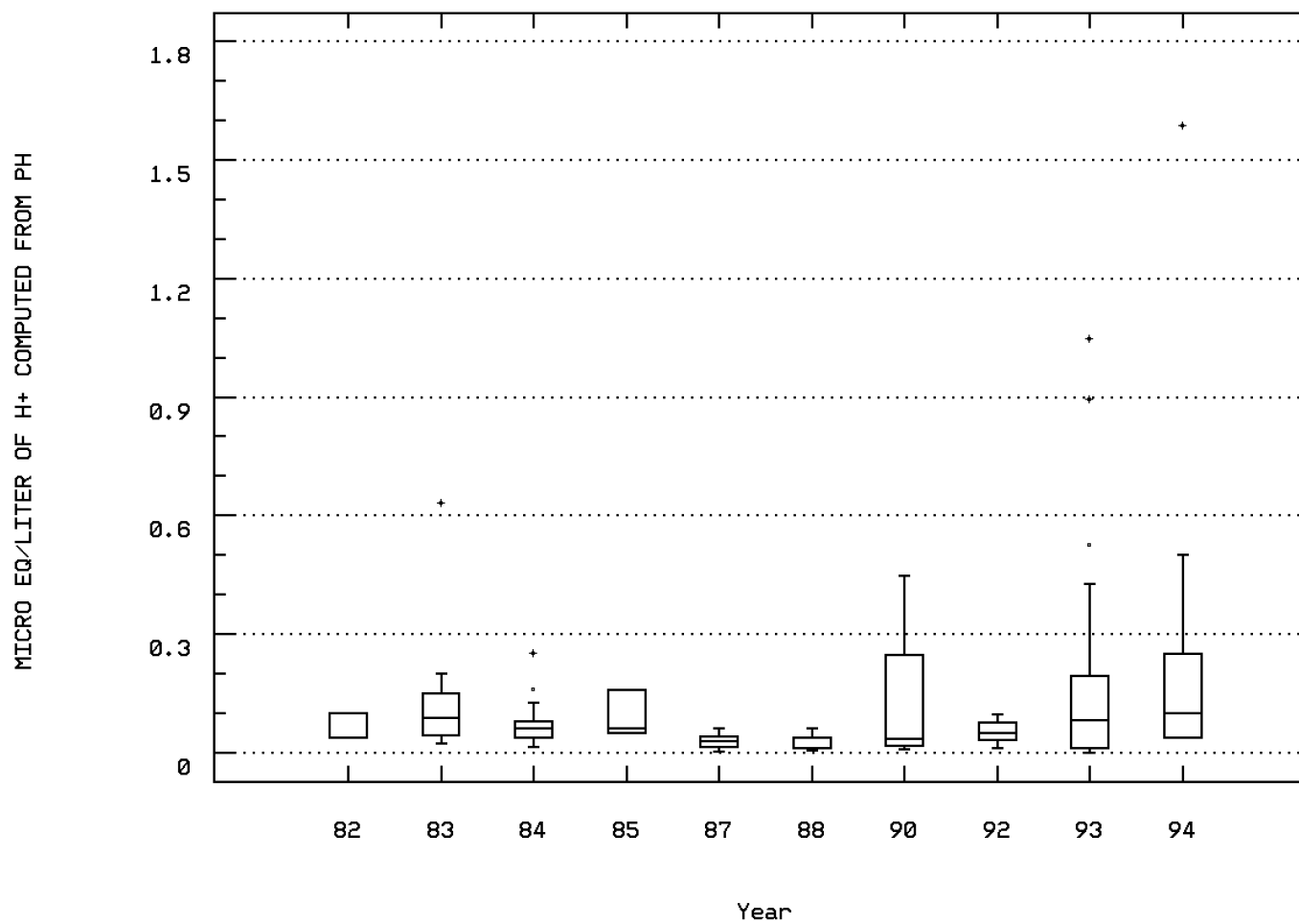
OXYGEN ,DISSOLVED, ANALYSIS BY PROBE



BULL RUN BALL'S FORD

Station: MANA0017 Parameter Code: 00406

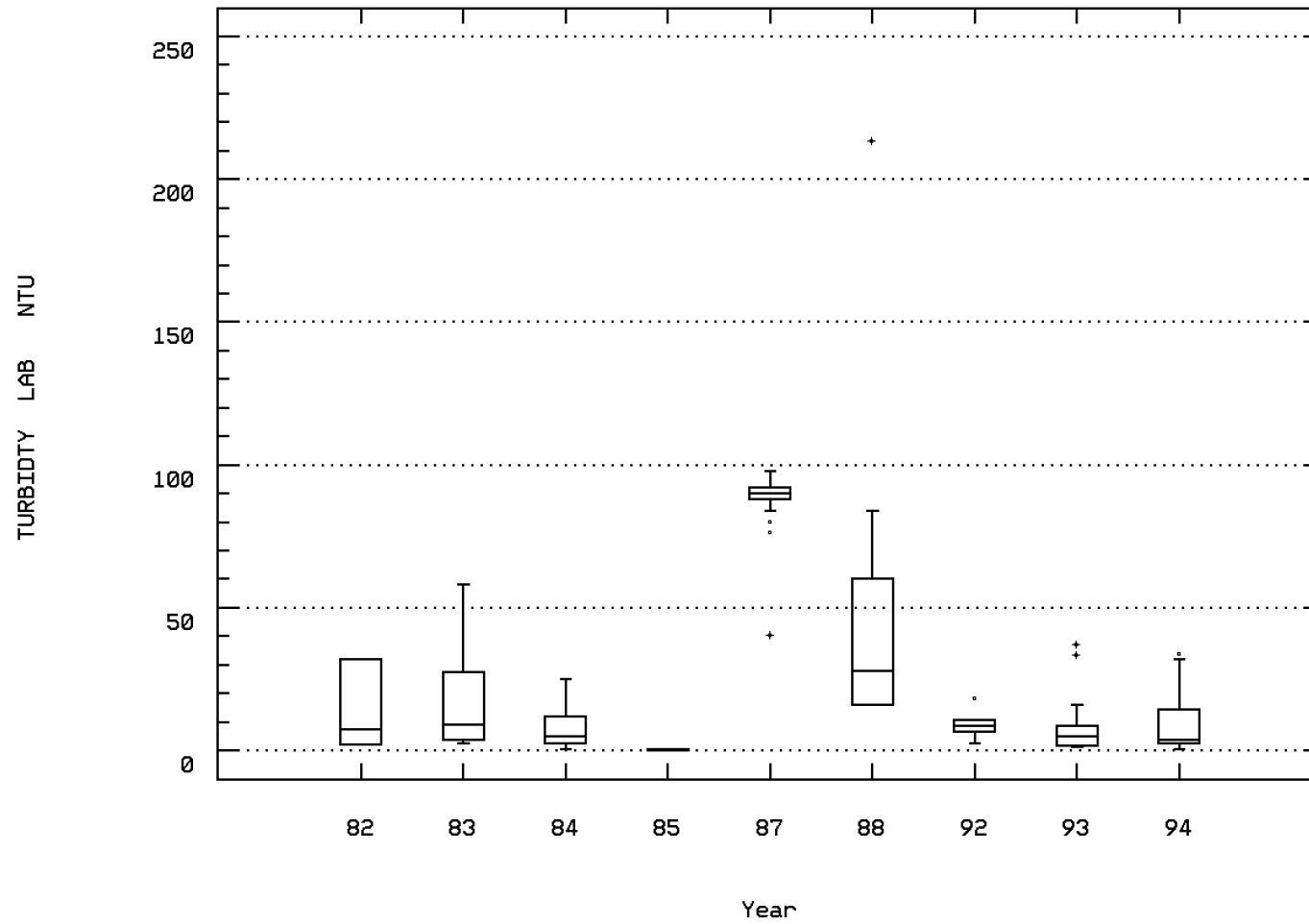
MICRO EQ/LITER OF H+ COMPUTED FROM PH



BULL RUN BALL'S FORD

Station: MANA0017 Parameter Code: 82079

TURBIDITY,LAB NEPHELOMETRIC TURBIDITY U



BULL RUN BALL'S FORD



### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	40	8.1	7.02	19.	-3.	31.035	5.571	1.55	3.25	11.	14.81
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	40	140.5	209.975	865.	80.	34378.999	185.416	100.	112.5	186.75	575.7
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	39	11.3	10.659	15.	3.8	8.346	2.889	5.7	9.	13.	13.7
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	40	7.2	7.122	8.	5.8	0.193	0.439	6.61	6.9	7.39	7.6
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	40	7.2	6.849	8.	5.8	0.269	0.519	6.61	6.9	7.39	7.6
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	40	0.063	0.142	1.585	0.01	0.069	0.262	0.025	0.041	0.126	0.246
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	36	3.5	12.997	120.	0.	780.952	27.946	0.035	0.425	8.75	34.2
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	15	2.	22.667	240.	0.	3715.667	60.956	0.	0.	20.	115.2
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	15	0.301	0.623	2.38	0.	0.572	0.756	0.	0.	1.301	1.855
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			4.197								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	36	5.8	10.517	58.	0.3	168.467	12.979	0.4	2.	11.625	32.45

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	62	16.5	16.448	29.	1.4	46.769	6.839	7.15	11.	22.	25.
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	62	146.5	211.306	1669.	70.	49416.019	222.297	100.	110.	219.75	393.2
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	62	11.2	10.821	15.5	4.3	7.514	2.741	7.26	8.75	13.6	14.2
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	62	7.315	7.307	8.4	5.98	0.222	0.471	6.737	7.	7.578	7.894
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	62	7.315	7.022	8.4	5.98	0.305	0.552	6.737	7.	7.578	7.894
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	62	0.048	0.095	1.047	0.004	0.03	0.172	0.013	0.026	0.1	0.184
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	41	3.	9.115	116.	0.	433.456	20.82	0.52	1.	8.	15.8
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	15	22.	55.133	260.	0.	5428.695	73.68	0.	0.	94.	189.2
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	15	1.342	1.123	2.415	0.	0.881	0.939	0.	0.	1.973	2.257
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			13.275								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	62	13.8	32.376	98.	0.1	1270.935	35.65	2.53	4.925	78.	90.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0017

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	31	23.8	23.203	30.	15.	15.254	3.906	17.2	20.6	26.	28.52
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	31	475.	444.645	870.	105.	64507.903	253.984	132.	177.	656.	804.
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	31	9.1	9.974	14.7	5.	8.197	2.863	6.1	8.	12.1	13.96
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	31	7.48	7.486	8.79	6.28	0.357	0.597	6.416	7.2	7.87	7.99
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	31	7.48	7.077	8.79	6.28	0.529	0.728	6.416	7.2	7.87	7.99
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	31	0.033	0.084	0.525	0.002	0.02	0.142	0.01	0.013	0.063	0.392
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	18	3.	5.306	18.	0.5	34.386	5.864	0.95	1.	6.25	18.
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	9	18.	44.556	120.	7.	2152.778	46.398	7.	13.	97.5	120.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	9	1.255	1.426	2.079	0.845	0.216	0.464	0.845	1.114	1.985	2.079
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			26.673								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	31	16.	34.929	213.	1.2	2323.406	48.202	1.42	1.9	80.	93.2

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

## Station Inventory for Station: MANA0018

NPS Station ID: MANA0018  
 Location: ELKLICK RUN NEAR CHANTILLY, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin:  
 Minor Basin:  
 RF1 Index: 02070010  
 RF3 Index: 02070010004602.61  
 Description:

LAT/LON: 38.871115/ -77.494448

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 2.60

Agency: 112WRD  
 FIPS State/County: 51059 VIRGINIA/FAIRFAX  
 STORET Station ID(s): 01656930  
 Within Park Boundary: No

Date Created: 01/26/80

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.10

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0018

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/30/79-08/30/79	1	22.5	22.5	22.5	22.5	0.	0.	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	08/30/79-08/30/79	1	80.	80.	80.	80.	0.	0.	**	**	**	**
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/30/79-08/30/79	1	171.	171.	171.	171.	0.	0.	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	08/30/79-08/30/79	1	5.5	5.5	5.5	5.5	0.	0.	**	**	**	**
00400 PH (STANDARD UNITS)	08/30/79-08/30/79	1	6.2	6.2	6.2	6.2	0.	0.	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	08/30/79-08/30/79	1	6.2	6.2	6.2	6.2	0.	0.	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	08/30/79-08/30/79	1	0.631	0.631	0.631	0.631	0.	0.	**	**	**	**
00405 CARBON DIOXIDE (MG/L AS CO2)	08/30/79-08/30/79	1	64.	64.	64.	64.	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	08/30/79-08/30/79	1	52.	52.	52.	52.	0.	0.	**	**	**	**
00440 BICARBONATE ION (MG/L AS HCO3)	08/30/79-08/30/79	1	63.	63.	63.	63.	0.	0.	**	**	**	**
00445 CARBONATE ION (MG/L AS CO3)	08/30/79-08/30/79	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00613 NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/30/79-08/30/79	1	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/30/79-08/30/79	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00631 NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/30/79-08/30/79	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00660 PHOSPHATE, ORTHO (MG/L AS PO4)	08/30/79-08/30/79	1	0.06	0.06	0.06	0.06	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/30/79-08/30/79	1	0.02	0.02	0.02	0.02	0.	0.	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	08/30/79-08/30/79	1	73.	73.	73.	73.	0.	0.	**	**	**	**
00902 HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/30/79-08/30/79	1	21.	21.	21.	21.	0.	0.	**	**	**	**
00915 CALCIUM, DISSOLVED (MG/L AS Ca)	08/30/79-08/30/79	1	18.	18.	18.	18.	0.	0.	**	**	**	**
00925 MAGNESIUM, DISSOLVED (MG/L AS MG)	08/30/79-08/30/79	1	6.7	6.7	6.7	6.7	0.	0.	**	**	**	**
00930 SODIUM, DISSOLVED (MG/L AS Na)	08/30/79-08/30/79	1	5.5	5.5	5.5	5.5	0.	0.	**	**	**	**
00931 SODIUM ADSORPTION RATIO	08/30/79-08/30/79	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00932 SODIUM, PERCENT	08/30/79-08/30/79	1	13.	13.	13.	13.	0.	0.	**	**	**	**
00933 SODIUM,PLUS POTASSIUM (MG/L)	08/30/79-08/30/79	1	9.	9.	9.	9.	0.	0.	**	**	**	**
00935 POTASSIUM, DISSOLVED (MG/L AS K)	08/30/79-08/30/79	1	3.5	3.5	3.5	3.5	0.	0.	**	**	**	**
00940 CHLORIDE,TOTAL IN WATER MG/L	08/30/79-08/30/79	1	8.	8.	8.	8.	0.	0.	**	**	**	**
00945 SULFATE, TOTAL (MG/L AS SO4)	08/30/79-08/30/79	1	13.	13.	13.	13.	0.	0.	**	**	**	**
00950 FLUORIDE, DISSOLVED (MG/L AS F)	08/30/79-08/30/79	1	0.1	0.1	0.1	0.1	0.	0.	**	**	**	**
00955 SILICA, DISSOLVED (MG/L AS SiO2)	08/30/79-08/30/79	1	13.	13.	13.	13.	0.	0.	**	**	**	**
01046 IRON, DISSOLVED (UG/L AS FE)	08/30/79-08/30/79	1	420.	420.	420.	420.	0.	0.	**	**	**	**
70300 RESIDUE,TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/30/79-08/30/79	1	137.	137.	137.	137.	0.	0.	**	**	**	**
70301 SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/30/79-08/30/79	1	101.	101.	101.	101.	0.	0.	**	**	**	**
70303 SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/30/79-08/30/79	1	0.19	0.19	0.19	0.19	0.	0.	**	**	**	**
71851 NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/30/79-08/30/79	1	1.3	1.3	1.3	1.3	0.	0.	**	**	**	**
71856 NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/30/79-08/30/79	1	0.03	0.03	0.03	0.03	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0018

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	1	0	0.00							1	0	0.00			
00400 PH	Other-Hi Lim.	9.	1	0	0.00							1	0	0.00			
	Other-Lo Lim.	6.5	1	1	1.00							1	1	1.00			
00613 NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	1	0	0.00							1	0	0.00			
00618 NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	1	0	0.00							1	0	0.00			
00631 NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	1	0	0.00							1	0	0.00			
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	1	0	0.00							1	0	0.00			
	Drinking Water	250.	1	0	0.00							1	0	0.00			
00945 SULFATE, TOTAL (AS SO4)	Drinking Water	250.	1	0	0.00							1	0	0.00			
00950 FLUORIDE, DISSOLVED AS F	Drinking Water	4.	1	0	0.00							1	0	0.00			
71851 NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	1	0	0.00							1	0	0.00			
71856 NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	1	0	0.00							1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0019

NPS Station ID: MANA0019	LAT/LON: 38.823892/ -77.504449	Agency: 21VASWCB	Date Created: 04/10/93
Location: ROUTE 29/211 (FAIRFAX CO)		FIPS State/County: 51059 VIRGINIA/FAIRFAX	
Station Type: /TYPA/AMBNT/STREAM		STORET Station ID(s): 1ABUL016.31	
RMI-Indexes:		Within Park Boundary: No	
RMI-Miles:			
HUC: 02070010	Depth of Water: 0	Aquifer:	
Major Basin: 02-NORTH ATLANTIC	Elevation: 0	Water Body Id:	
Minor Basin: 1-POTOMAC-SHENANDOAH		ECO Region:	
RF1 Index: 02070010	RF1 Mile Point: 0.000	Distance from RF1: 0.00	On/Off RF1:
RF3 Index: 02070010059601.50	RF3 Mile Point: 4.50	Distance from RF3: 0.21	On/Off RF3:
Description:			
VIRGINIA STATE WATER CONTROL BOARD	AMBIENT MONITORING	BASIN: 1A POTOMAC	REGION: 3 NORTHERN
RIVER: BULL RUN	SECTION: 07A	TOPO MAP #: 0027	TOPO MAP NAME: GAINESVILLE, VA

### Parameter Inventory for Station: MANA0019

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00310 BOD, 5 DAY, 20 DEG C MG/L	01/08/75-06/10/76	2	2.	2.	3.	1.	2.	1.414	**	**	**	**
00340 COD, .25N K2CR2O7 MG/L	01/08/75-06/10/76	2	12.	12.	20.	4.	128.	11.314	**	**	**	**
00403 PH, LAB, STANDARD UNITS SU	01/08/75-01/08/75	1	7.3	7.3	7.3	7.3	0.	0.	**	**	**	**
00403 CONVERTED PH, LAB, STANDARD UNITS	01/08/75-01/08/75	1	7.3	7.3	7.3	7.3	0.	0.	**	**	**	**
00403 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	01/08/75-01/08/75	1	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	01/08/75-01/08/75	1	4.	4.	4.	4.	0.	0.	**	**	**	**
00500 RESIDUE, TOTAL (MG/L)	01/08/75-06/10/76	2	104.5	104.5	123.	86.	684.5	26.163	**	**	**	**
00505 RESIDUE, TOTAL VOLATILE (MG/L)	01/08/75-06/10/76	2	50.	50.	66.	34.	512.	22.627	**	**	**	**
00510 RESIDUE, TOTAL FIXED (MG/L)	01/08/75-06/10/76	2	54.5	54.5	57.	52.	12.5	3.536	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/08/75-06/10/76	2	6.5	6.5	8.	5.	4.5	2.121	**	**	**	**
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	01/08/75-06/10/76	2	3.	3.	4.	2.	2.	1.414	**	**	**	**
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	01/08/75-06/10/76	2	3.5	3.5	4.	3.	0.5	0.707	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	01/08/75-06/10/76	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	01/08/75-06/10/76	2	0.515	0.515	0.9	0.13	0.296	0.544	**	**	**	**
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	01/08/75-06/10/76	2 ##	0.038	0.038	0.07	0.005	0.002	0.046	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	01/08/75-06/10/76	2 ##	0.225	0.225	0.4	0.05	0.061	0.247	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	01/08/75-06/10/76	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/08/75-06/10/76	2 ##	0.03	0.03	0.05	0.01	0.001	0.028	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	01/08/75-06/10/76	2	6.5	6.5	8.	5.	4.5	2.121	**	**	**	**
00940 CHLORIDE,TOTAL IN WATER MG/L	01/08/75-06/10/76	2	5.5	5.5	7.	4.	4.5	2.121	**	**	**	**
31616 FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	01/08/75-06/10/76	2 ##	75.	75.	100.	50.	1250.	35.355	**	**	**	**
31616 LOG FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	01/08/75-06/10/76	2 ##	1.849	1.849	2.	1.699	0.045	0.213	**	**	**	**
31616 GM FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	GEOMETRIC MEAN =			70.711								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0019

Parameter	Std. Type	Std. Value	Total		Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
			Obs				Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00403 PH, LAB	Other-Hi Lim.	9.	1		0	0.00	1	0	0.00									
	Other-Lo Lim.	6.5	1		0	0.00	1	0	0.00									
00615 NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	2		0	0.00	1	0	0.00		0	0.00						
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	2		0	0.00	1	0	0.00	1	0	0.00						
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	2		0	0.00	1	0	0.00	1	0	0.00						
	Drinking Water	250.	2		0	0.00	1	0	0.00	1	0	0.00						
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	2		0	0.00	1	0	0.00	1	0	0.00						

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0020

NPS Station ID: MANA0020  
 Location: HOLKUMS BRANCH  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC RIVER  
 RF1 Index: 02070010  
 RF3 Index: 02070010059601.50  
 Description:

LAT/LON: 38.811254/ -77.510532

Depth of Water: 0  
 Elevation: 170

RF1 Mile Point: 0.000  
 RF3 Mile Point: 4.50

Agency: 11NPSWRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): MANA\_08  
 Within Park Boundary: Yes

Date Created: 06/22/96

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.21

On/Off RF1:  
 On/Off RF3:

HOLKUMS BRANCH AT BRIDGE CROSSING NEAR SEWAGE TREATMENT FACILITY. SITE IS LOCATED ON THE GAINESVILLE VA 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE. IT IS THE RESPONSIBILITY OF MANASSAS NATIONAL BATTLEFIELD PARK - 6511 SUDLEY ROAD - MANASSAS VIRGINIA 22110 PH.(703)754-1861. FOR MORE INFORMATION CONTACT BARBARA MAULLER - RESOURCE MANAGEMENT - AT MANASSAS NATIONAL BATTLEFIELD PARK. DATA PROCESSED AND UPLOADED TO STORET BY RANDY SIDDENS AT NATIONAL PARK SERVICE WATER RESOURCE DIVISION IN FORT COLLINS COLORADO PH.(970)225-3556 FAX (970)225-9965.

### Parameter Inventory for Station: MANA0020

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/07/87-11/13/94	92	17.5	16.51	27.	1.	48.223	6.944	5.33	11.	22.	25.
00020 TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	11	20.	18.682	28.	5.	51.214	7.156	5.8	13.	24.	27.4
00045 PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	20	0.	0.158	1.62	0.	0.14	0.375	0.	0.	0.178	0.56
00061 FLOW, STREAM, INSTANTANEOUS CFS	04/12/87-11/26/90	28	0.75	1.791	12.	0.05	6.596	2.568	0.05	0.2	2.75	5.
00064 DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	25	1.	1.	1.8	0.1	0.197	0.443	0.38	0.7	1.4	1.58
00094 SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	03/07/87-11/13/94	92	281.5	341.391	1069.	80.	30228.153	173.862	190.3	230.25	408.25	585.3
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	03/07/87-11/13/94	92	10.8	9.901	15.5	0.9	13.427	3.664	4.83	6.95	13.	14.
00406 PH, FIELD, STANDARD UNITS SU	03/07/87-11/13/94	92	7.2	7.225	8.93	5.6	0.262	0.512	6.6	7.	7.515	7.844
00406 CONVERTED PH, FIELD, STANDARD UNITS	03/07/87-11/13/94	92	7.2	6.889	8.93	5.6	0.375	0.613	6.6	7.	7.515	7.844
00406 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/07/87-11/13/94	92	0.063	0.129	2.512	0.001	0.083	0.288	0.014	0.031	0.1	0.251
00480 SALINITY - PARTS PER THOUSAND	03/07/87-11/26/90	40	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/23/92-11/13/94	50	4.	11.25	97.	0.	368.839	19.205	1.	2.5	10.25	24.5
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	5	0.25	0.42	1.01	0.12	0.139	0.372	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	2	0.3	0.3	0.31	0.29	0.	0.014	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	11/28/92-10/27/94	25	17.	65.	309.	0.	8768.75	93.642	3.6	5.	97.	232.4
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	11/28/92-10/27/94	25	1.23	1.3	2.49	0.	0.521	0.722	0.552	0.699	1.983	2.366
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			19.968								
82079 TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	03/14/87-11/13/94	87	16.	34.164	238.	0.9	1723.125	41.511	1.58	3.	68.	92.8
85663 FLOW, RATE FT/SEC	01/23/92-11/13/94	52	0.1	0.356	2.82	0.	0.367	0.606	0.026	0.05	0.225	1.356

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0020

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	92	7	0.08	21	2	0.10	45	2	0.04	26	3	0.12			
00406 PH, FIELD	Other-Hi Lim.	9.	92	0	0.00	21	0	0.00	45	0	0.00	26	0	0.00			
	Other-Lo Lim.	6.5	92	7	0.08	21	4	0.19	45	2	0.04	26	1	0.04			
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	5	0	0.00	1	0	0.00	1	0	0.00	3	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	25	4	0.16	7	0	0.00	9	2	0.22	9	2	0.22			
82079 TURBIDITY, LAB	Other-Hi Lim.	50.	87	26	0.30	16	1	0.06	45	16	0.36	26	9	0.35			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### Annual Analysis for 1987 - Station MANA0020

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/07/87-11/13/94	23	20.	17.696	27.	5.	42.04	6.484	8.4	11.	23.	26.
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	03/07/87-11/13/94	23	350.	377.391	800.	80.	37801.976	194.427	176.	230.	490.	760.
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	03/07/87-11/13/94	23	13.8	13.939	15.5	12.8	0.635	0.797	13.	13.2	14.4	15.36
00406	PH, FIELD, STANDARD UNITS SU	03/07/87-11/13/94	23	7.27	7.256	7.85	7.01	0.039	0.197	7.052	7.1	7.36	7.52
00406	CONVERTED PH, FIELD, STANDARD UNITS	03/07/87-11/13/94	23	7.27	7.22	7.85	7.01	0.04	0.2	7.052	7.1	7.36	7.52
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/07/87-11/13/94	23	0.054	0.06	0.098	0.014	0.	0.022	0.031	0.044	0.079	0.089
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	03/14/87-11/13/94	22	89.5	83.545	96.	26.	352.26	18.769	43.5	83.5	96.	96.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1988 - Station MANA0020

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/07/87-11/13/94	13	19.	19.154	26.	10.	30.641	5.535	10.4	15.	24.5	26.
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	03/07/87-11/13/94	13	410.	391.923	650.	150.	20539.744	143.317	158.	282.5	500.	598.
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	03/07/87-11/13/94	13	11.9	11.908	13.5	10.2	0.676	0.822	10.64	11.5	12.25	13.34
00406	PH, FIELD, STANDARD UNITS SU	03/07/87-11/13/94	13	7.44	7.51	8.	7.1	0.083	0.288	7.112	7.3	7.76	7.96
00406	CONVERTED PH, FIELD, STANDARD UNITS	03/07/87-11/13/94	13	7.44	7.429	8.	7.1	0.09	0.3	7.112	7.3	7.76	7.96
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/07/87-11/13/94	13	0.036	0.037	0.079	0.01	0.001	0.022	0.011	0.017	0.05	0.077
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	03/14/87-11/13/94	13	44.	54.846	238.	16.	3557.308	59.643	16.	17.	54.	181.2

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1990 - Station MANA0020

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/07/87-11/13/94	4	13.5	14.75	20.	12.	12.917	3.594	**	**	**	**
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	03/07/87-11/13/94	4	194.5	212.5	300.	161.	3665.667	60.545	**	**	**	**
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	03/07/87-11/13/94	4	5.05	5.15	6.7	3.8	1.457	1.207	**	**	**	**
00406	PH, FIELD, STANDARD UNITS SU	03/07/87-11/13/94	4	7.31	6.983	7.71	5.6	0.907	0.952	**	**	**	**
00406	CONVERTED PH, FIELD, STANDARD UNITS	03/07/87-11/13/94	4	7.274	6.181	7.71	5.6	1.764	1.328	**	**	**	**
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/07/87-11/13/94	4	0.053	0.659	2.512	0.019	1.526	1.235	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1992 - Station MANA0020

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/07/87-11/13/94	12	13.	12.85	21.	2.	42.032	6.483	2.3	9.	19.125	20.94
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	03/07/87-11/13/94	12	272.	278.25	438.	221.	3651.114	60.424	222.2	228.75	292.	406.2
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	03/07/87-11/13/94	12	8.95	9.233	12.	7.1	2.85	1.688	7.25	7.65	10.675	11.85
00406	PH, FIELD, STANDARD UNITS SU	03/07/87-11/13/94	12	7.685	7.602	8.2	6.67	0.235	0.485	6.778	7.223	8.	8.2
00406	CONVERTED PH, FIELD, STANDARD UNITS	03/07/87-11/13/94	12	7.67	7.341	8.2	6.67	0.309	0.556	6.778	7.222	8.	8.2
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/07/87-11/13/94	12	0.021	0.046	0.214	0.006	0.004	0.059	0.006	0.01	0.06	0.178
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	03/14/87-11/13/94	12	11.5	11.9	32.6	0.9	93.815	9.686	1.05	1.975	18.4	29.33

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot



### Annual Analysis for 1993 - Station MANA0020

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/07/87-11/13/94	21	19.6	16.586	26.7	1.	64.647	8.04	3.62	10.05	22.25	26.36
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	03/07/87-11/13/94	21	265.	284.952	551.	161.	9981.448	99.907	173.4	215.	330.	463.8
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	03/07/87-11/13/94	21	6.6	6.962	13.1	0.9	13.516	3.676	1.28	4.4	9.8	12.38
00406	PH, FIELD, STANDARD UNITS SU	03/07/87-11/13/94	21	7.2	7.238	8.93	6.43	0.353	0.594	6.48	6.775	7.53	7.958
00406	CONVERTED PH, FIELD, STANDARD UNITS	03/07/87-11/13/94	21	7.2	6.96	8.93	6.43	0.434	0.659	6.48	6.775	7.53	7.958
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/07/87-11/13/94	21	0.063	0.11	0.372	0.001	0.013	0.113	0.011	0.03	0.17	0.331
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	03/14/87-11/13/94	21	3.	5.981	32.	1.1	55.722	7.465	1.42	2.15	6.4	17.4

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1994 - Station MANA0020

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/07/87-11/13/94	19	17.	15.863	25.	4.	55.406	7.444	4.	11.	23.	25.
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	03/07/87-11/13/94	19	281.	392.632	1069.	191.	62654.357	250.309	193.	244.	495.	811.
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	03/07/87-11/13/94	19	8.5	8.311	12.4	2.	7.844	2.801	4.5	6.2	10.8	12.4
00406	PH, FIELD, STANDARD UNITS SU	03/07/87-11/13/94	19	6.7	6.789	7.8	6.	0.165	0.407	6.2	6.6	7.1	7.2
00406	CONVERTED PH, FIELD, STANDARD UNITS	03/07/87-11/13/94	19	6.7	6.624	7.8	6.	0.194	0.441	6.2	6.6	7.1	7.2
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/07/87-11/13/94	19	0.2	0.238	1.	0.016	0.055	0.234	0.063	0.079	0.251	0.631
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	03/14/87-11/13/94	19	3.1	8.047	30.1	0.9	64.506	8.032	1.5	2.5	11.9	20.7

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0020

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/07/87-11/13/94	21	9.	8.933	20.	2.	22.723	4.767	3.	4.5	12.15	14.8
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	03/07/87-11/13/94	21	265.	284.333	790.	161.	17556.933	132.503	174.	220.5	288.5	426.4
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	03/07/87-11/13/94	21	10.2	9.367	15.5	3.8	11.059	3.326	4.08	6.65	11.7	14.32
00406	PH, FIELD, STANDARD UNITS SU	03/07/87-11/13/94	21	7.13	7.041	7.99	5.6	0.349	0.59	6.04	6.735	7.475	7.688
00406	CONVERTED PH, FIELD, STANDARD UNITS	03/07/87-11/13/94	21	7.13	6.565	7.99	5.6	0.586	0.766	6.04	6.735	7.475	7.688
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/07/87-11/13/94	21	0.074	0.272	2.512	0.01	0.322	0.567	0.021	0.034	0.186	0.926
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	03/14/87-11/13/94	16	8.5	14.556	89.	1.1	464.827	21.56	1.38	2.625	17.95	47.77

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0020

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/07/87-11/13/94	45	17.	16.502	27.	1.	34.541	5.877	9.	11.75	21.	24.4
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	03/07/87-11/13/94	45	294.	349.6	1069.	80.	34921.655	186.873	197.2	235.	405.	604.4
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	03/07/87-11/13/94	45	12.	10.629	15.4	2.	11.895	3.449	5.08	7.9	13.55	14.
00406	PH, FIELD, STANDARD UNITS SU	03/07/87-11/13/94	45	7.2	7.275	8.2	6.43	0.209	0.457	6.6	7.005	7.585	7.94
00406	CONVERTED PH, FIELD, STANDARD UNITS	03/07/87-11/13/94	45	7.2	7.061	8.2	6.43	0.256	0.506	6.6	7.005	7.585	7.94
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/07/87-11/13/94	45	0.063	0.087	0.372	0.006	0.008	0.09	0.012	0.026	0.099	0.251
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	03/14/87-11/13/94	45	18.	38.336	96.	0.9	1451.991	38.105	1.92	3.3	85.	96.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0020

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/07/87-11/13/94	26	23.	22.642	26.7	16.	9.232	3.038	17.7	21.075	25.25	26.18
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	03/07/87-11/13/94	26	350.	373.269	800.	150.	30609.965	174.957	182.	231.	496.25	665.
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	03/07/87-11/13/94	26	9.9	9.073	14.7	0.9	17.184	4.145	1.48	6.2	12.25	14.19
00406	PH, FIELD, STANDARD UNITS SU	03/07/87-11/13/94	26	7.31	7.286	8.93	6.5	0.269	0.519	6.628	6.923	7.493	7.895
00406	CONVERTED PH, FIELD, STANDARD UNITS	03/07/87-11/13/94	26	7.31	7.063	8.93	6.5	0.321	0.566	6.628	6.923	7.493	7.895
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/07/87-11/13/94	26	0.049	0.086	0.316	0.001	0.007	0.084	0.013	0.033	0.12	0.236
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	03/14/87-11/13/94	26	17.	39.012	238.	0.9	2791.329	52.833	1.68	2.3	60.5	93.2

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

## Station Inventory for Station: MANA0021

NPS Station ID: MANA0021 Location: YOUNGS BRANCH QUARTERS 6 Station Type: /TYPA/AMBNT/STREAM RMI-Indexes: RMI-Miles: HUC: 02070010 Major Basin: NORTH ATLANTIC Minor Basin: POTOMAC RIVER RF1 Index: 02070010 RF3 Index: 02070010059601.50 Description: MIDDLE YOUNGS BRANCH UPSTREAM FROM WHERE WARRENTON TURNPIKE CROSSES THE STREAM ALONG ACCESS ROAD TO RANGER STATION. SITE IS LOCATED ON THE GAINESVILLE VA 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE. IT IS THE RESPONSIBILITY OF MANASSAS NATIONAL BATTLEFIELD PARK - 6511 SUDLEY ROAD - MANASSAS VIRGINIA 22110 PH.(703)754-1861. FOR MORE INFORMATION CONTACT BARBARA MAULLER - RESOURCE MANAGEMENT - AT MANASSAS NATIONAL BATTLEFIELD PARK. DATA PROCESSED AND UPLOADED TO STORET BY RANDY SIDDENS AT NATIONAL PARK SERVICE WATER RESOURCE DIVISION IN FORT COLLINS COLORADO PH.(970)225-3556 FAX (970)225-9965.	LAT/LON: 38.822892/ -77.516281           Depth of Water: 0 Elevation: 165   RF1 Mile Point: 0.000 RF3 Mile Point: 4.50	Agency: 11NPSWRD FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM STORET Station ID(s): MANA_07 Within Park Boundary: Yes   Aquifer: Water Body Id: ECO Region: Distance from RF1: 0.00 Distance from RF3: 0.21
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Date Created: 06/22/96

On/Off RF1:  
On/Off RF3:

## Parameter Inventory for Station: MANA0021

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	109	13.5	13.804	28.2	-3.	67.869	8.238	3.2	7.05	20.75	25.
00020 TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	11	20.	19.136	29.	8.	46.155	6.794	8.1	13.5	25.	28.4
00045 PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	20	0.	0.158	1.62	0.	0.14	0.375	0.	0.	0.178	0.56
00061 FLOW, STREAM, INSTANTANEOUS CFS	03/27/88-11/01/90	8 ##	0.05	6.519	50.	0.05	308.839	17.574	**	**	**	**
00064 DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	25	1.1	1.124	2.1	0.1	0.222	0.471	0.3	0.9	1.45	1.8
00094 SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	110	250.	292.273	1346.	40.	33996.732	184.382	120.	174.5	360.25	491.7
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	107	10.3	9.681	14.7	1.4	9.129	3.021	4.96	7.6	12.	13.04
00406 PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	110	7.2	7.169	8.77	2.1	0.495	0.703	6.42	6.9	7.508	7.863
00406 CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	110	7.2	4.141	8.77	2.1	9.75	3.123	6.42	6.9	7.507	7.863
00406 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	110	0.063	72.327	7943.282	0.002	573580.808	757.351	0.014	0.031	0.126	0.383
00480 SALINITY - PARTS PER THOUSAND	03/27/88-11/01/90	15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	94	3.	7.988	188.	0.	444.595	21.085	0.05	1.	6.	19.5
00630 NITRITE PLUS NITRATE, TOTAL I DET. (MG/L AS N)	08/08/93-10/27/94	5 ##	0.05	0.43	1.13	0.05	0.279	0.528	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	2	0.425	0.425	0.43	0.42	0.	0.007	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	40	21.	46.725	364.	0.	4983.589	70.595	0.	0.	67.	148.
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	40	1.322	1.107	2.561	0.	0.705	0.839	0.	0.	1.824	2.17
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			12.804								
82079 TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	106	4.75	9.279	54.	0.1	131.309	11.459	1.2	2.5	11.05	25.3
85663 FLOW, RATE FT/SEC	01/23/92-11/13/94	52	0.3	0.536	3.48	0.	0.496	0.704	0.05	0.1	0.64	1.543

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0021

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE					Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00406	PH, FIELD																
	Other-Lo Lim.	4.	107	6	0.06	39	1	0.03	44	2	0.05	24	3	0.13			
	Other-Hi Lim.	9.	110	0	0.00	40	0	0.00	45	0	0.00	25	0	0.00			
	Other-Lo Lim.	6.5	110	11	0.10	40	5	0.13	45	5	0.11	25	1	0.04			
00630	NITRITE PLUS NITRATE, TOTAL 1 DET.																
	Drinking Water	10.	5	0	0.00	1	0	0.00	1	0	0.00	3	0	0.00			
31616	FECAL COLIFORM, MEMBRANE FILTER, BROTH																
	Other-Hi Lim.	200.	40	1	0.03	15	0	0.00	16	1	0.06	9	0	0.00			
82079	TURBIDITY, LAB																
	Other-Hi Lim.	50.	106	3	0.03	36	0	0.00	45	1	0.02	25	2	0.08			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### Annual Analysis for 1982 - Station MANA0021

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	3	10.5	7.333	10.5	1.	30.083	5.485	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	3	260.	250.	310.	180.	4300.	65.574	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	3	10.7	11.767	14.	10.6	3.743	1.935	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	3	7.	7.1	7.4	6.9	0.07	0.265	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	3	7.	7.053	7.4	6.9	0.073	0.271	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	3	0.1	0.089	0.126	0.04	0.002	0.044	**	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	3	4.	3.667	5.	2.	2.333	1.528	**	**	**	**
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	3	4.2	10.767	26.	2.1	175.143	13.234	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1983 - Station MANA0021

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12	6.25	8.6	21.	0.5	45.793	6.767	0.65	3.525	15.875	19.8
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12	150.	162.5	300.	100.	3311.364	57.544	103.	120.	200.	276.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12	11.9	11.55	14.2	8.8	3.088	1.757	8.98	9.7	12.625	14.14
00406p	PH, FIELD, STANDARD UNITS SU	12	7.1	7.058	7.6	6.4	0.128	0.358	6.49	6.75	7.375	7.57
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12	7.1	6.923	7.6	6.4	0.148	0.385	6.49	6.75	7.375	7.57
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12	0.079	0.119	0.398	0.025	0.011	0.106	0.027	0.042	0.181	0.339
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12	3.	3.263	9.	0.05	8.662	2.943	0.05	0.288	5.75	8.1
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12	8.35	11.458	32.	2.6	90.314	9.503	2.96	4.1	19.75	29.6

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1984 - Station MANA0021

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	24	11.	11.771	27.5	-3.	89.369	9.454	3.	6.75	19.375	26.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	25	210.	221.6	370.	100.	6374.417	79.84	109.	160.	290.	334.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	22	10.8	10.627	14.7	7.6	4.957	2.227	7.72	8.675	11.95	14.14
00406p	PH, FIELD, STANDARD UNITS SU	25	7.2	7.12	7.8	6.3	0.134	0.366	6.58	6.9	7.4	7.58
00406p	CONVERTED PH, FIELD, STANDARD UNITS	25	7.2	6.961	7.8	6.3	0.16	0.4	6.58	6.9	7.4	7.58
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	25	0.063	0.109	0.501	0.016	0.013	0.114	0.027	0.04	0.126	0.279
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	24	1.	3.135	28.	0.05	36.068	6.006	0.05	0.5	3.	9.5
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	25	3.9	4.384	13.	0.1	9.962	3.156	0.76	1.75	6.9	8.56

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1985 - Station MANA0021

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	3	6.3	8.233	14.2	4.2	27.803	5.273	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	3	100.	100.	160.	40.	3600.	60.	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	3	12.6	12.533	12.8	12.2	0.093	0.306	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	3	7.2	5.533	7.3	2.1	8.843	2.974	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	3	7.2	2.577	7.3	2.1	21.952	4.685	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	3	0.063	2647.799	7943.282	0.05	21031611.719	4586.024	**	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	3	3.	2.667	3.	2.	0.333	0.577	**	**	**	**
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	3	0.2	0.233	0.3	0.2	0.003	0.058	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1988 - Station MANA0021

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	11	19.	19.909	26.	11.	27.091	5.205	11.2	17.	25.	25.8
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	11	215.	245.	425.	100.	11070.	105.214	100.	175.	345.	411.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	11	12.	12.091	13.2	11.3	0.293	0.541	11.32	11.9	12.2	13.12
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	11	7.4	7.425	7.9	7.1	0.074	0.271	7.114	7.2	7.7	7.88
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	11	7.4	7.357	7.9	7.1	0.079	0.28	7.114	7.2	7.7	7.88
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	11	0.04	0.044	0.079	0.013	0.001	0.023	0.013	0.02	0.063	0.077
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	11	25.	28.455	54.	16.	233.473	15.28	16.	16.	44.	54.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1990 - Station MANA0021

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	4	11.3	13.4	20.	11.	19.407	4.405	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	4	238.5	284.25	460.	200.	14058.917	118.57	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	4	6.2	5.425	6.8	2.5	3.943	1.986	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	4	7.805	7.788	8.2	7.34	0.152	0.389	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	4	7.758	7.663	8.2	7.34	0.172	0.415	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	4	0.017	0.022	0.046	0.006	0.	0.018	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1992 - Station MANA0021

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th	
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	12	14.15	13.908	22.1	4.	41.132	6.413	4.6	7.175	20.45	22.07
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	12	322.5	322.917	480.	173.	9957.538	99.787	180.5	217.	398.75	472.5
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	12	9.4	9.925	13.8	7.5	3.233	1.798	7.8	9.	10.725	13.5
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	12	7.565	7.473	8.1	6.28	0.31	0.557	6.412	7.153	7.95	8.1
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	12	7.564	7.08	8.1	6.28	0.479	0.692	6.412	7.152	7.95	8.1
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	12	0.027	0.083	0.525	0.008	0.022	0.148	0.008	0.011	0.071	0.425
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	12	5.	9.458	40.	2.5	134.612	11.602	2.5	2.5	12.75	35.2
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	12	5.8	6.525	13.8	1.7	17.277	4.157	1.91	2.775	10.65	13.26

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1993 - Station MANA0021

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	21	17.9	16.495	28.2	1.6	74.64	8.639	2.52	10.	24.95	27.08
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	21	320.	342.667	581.	150.	20651.533	143.706	171.8	201.5	485.5	556.6
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	21	5.5	6.933	13.3	1.4	13.267	3.642	3.08	4.15	10.9	12.64
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	21	7.54	7.357	8.77	6.03	0.575	0.759	6.088	6.915	7.82	8.45
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	21	7.54	6.774	8.77	6.03	0.932	0.966	6.088	6.915	7.82	8.45
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	21	0.029	0.168	0.933	0.002	0.083	0.288	0.004	0.015	0.123	0.828
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	21	5.	16.333	188.	1.	1616.733	40.209	2.	3.	11.	33.8
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	21	3.4	8.943	50.	1.8	175.371	13.243	1.84	2.5	7.45	38.84

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

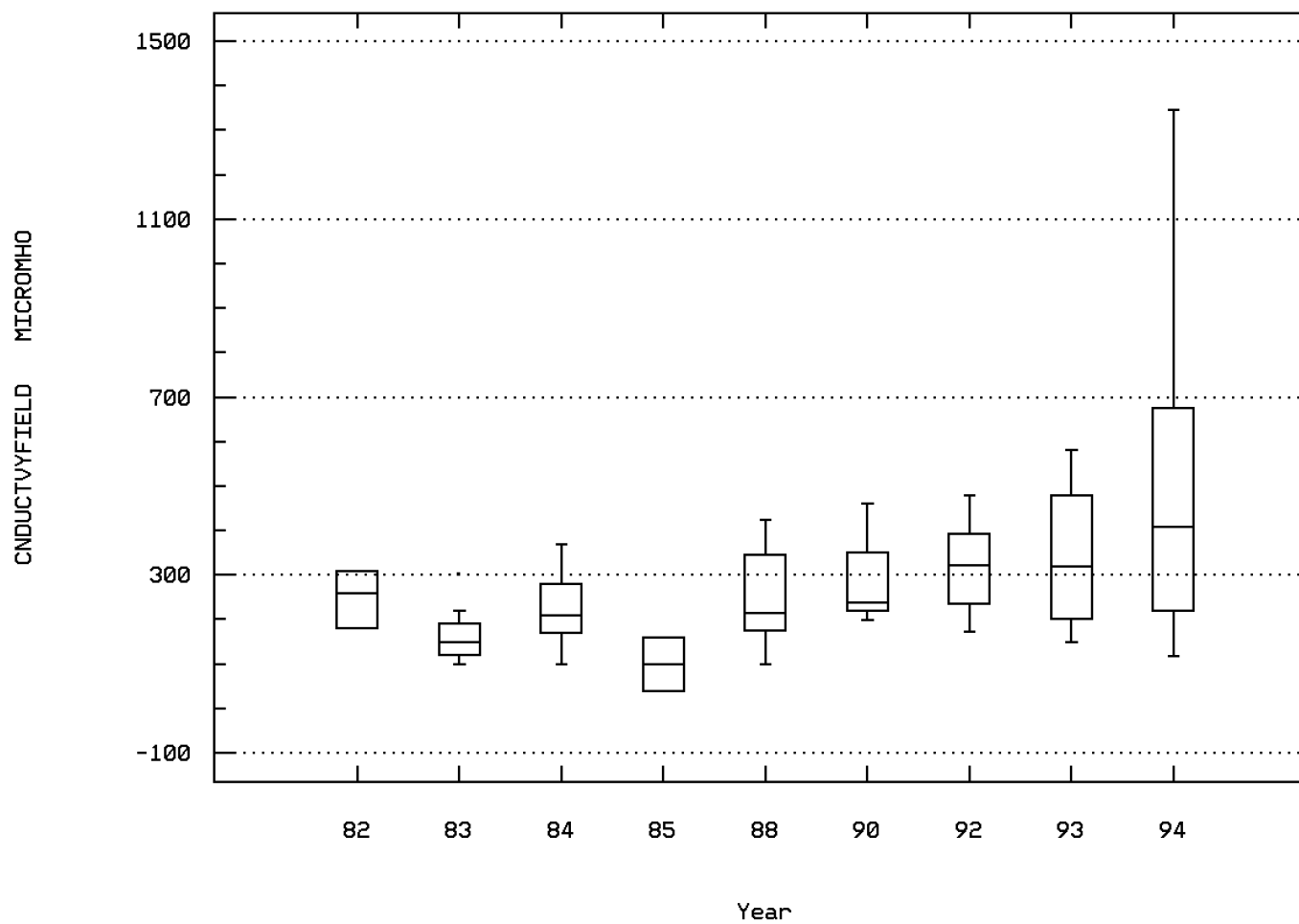
### Annual Analysis for 1994 - Station MANA0021

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	19	16.	15.068	28.	2.	63.572	7.973	3.	8.	22.	25.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	19	409.	458.263	1346.	118.	98268.094	313.477	127.	220.	674.	974.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	19	9.3	9.011	13.2	4.	5.722	2.392	5.9	7.4	10.6	12.4
00406p	PH, FIELD, STANDARD UNITS SU	19	6.9	6.895	7.4	6.3	0.088	0.297	6.4	6.7	7.1	7.3
00406p	CONVERTED PH, FIELD, STANDARD UNITS	19	6.9	6.796	7.4	6.3	0.099	0.314	6.4	6.7	7.1	7.3
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	19	0.126	0.16	0.501	0.04	0.014	0.12	0.05	0.079	0.2	0.398
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	19	2.	8.474	49.	0.	229.708	15.156	0.	0.	8.	48.
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	19	2.8	6.547	27.3	0.5	54.693	7.395	0.9	1.9	10.1	20.6

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0021 Parameter Code: 00094

SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @

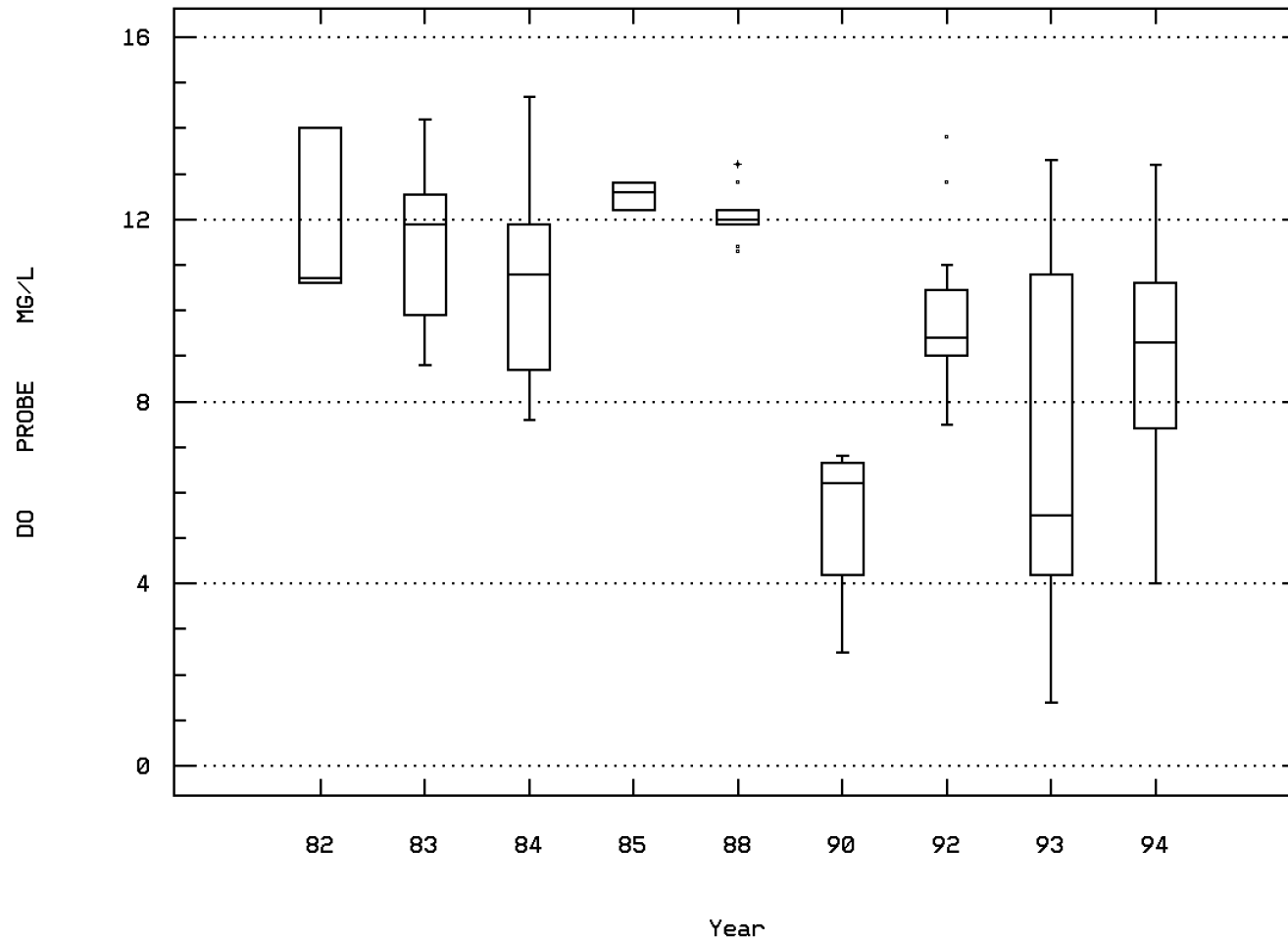


YOUNGS BRANCH QUARTERS 6



Station: MANA0021 Parameter Code: 00299

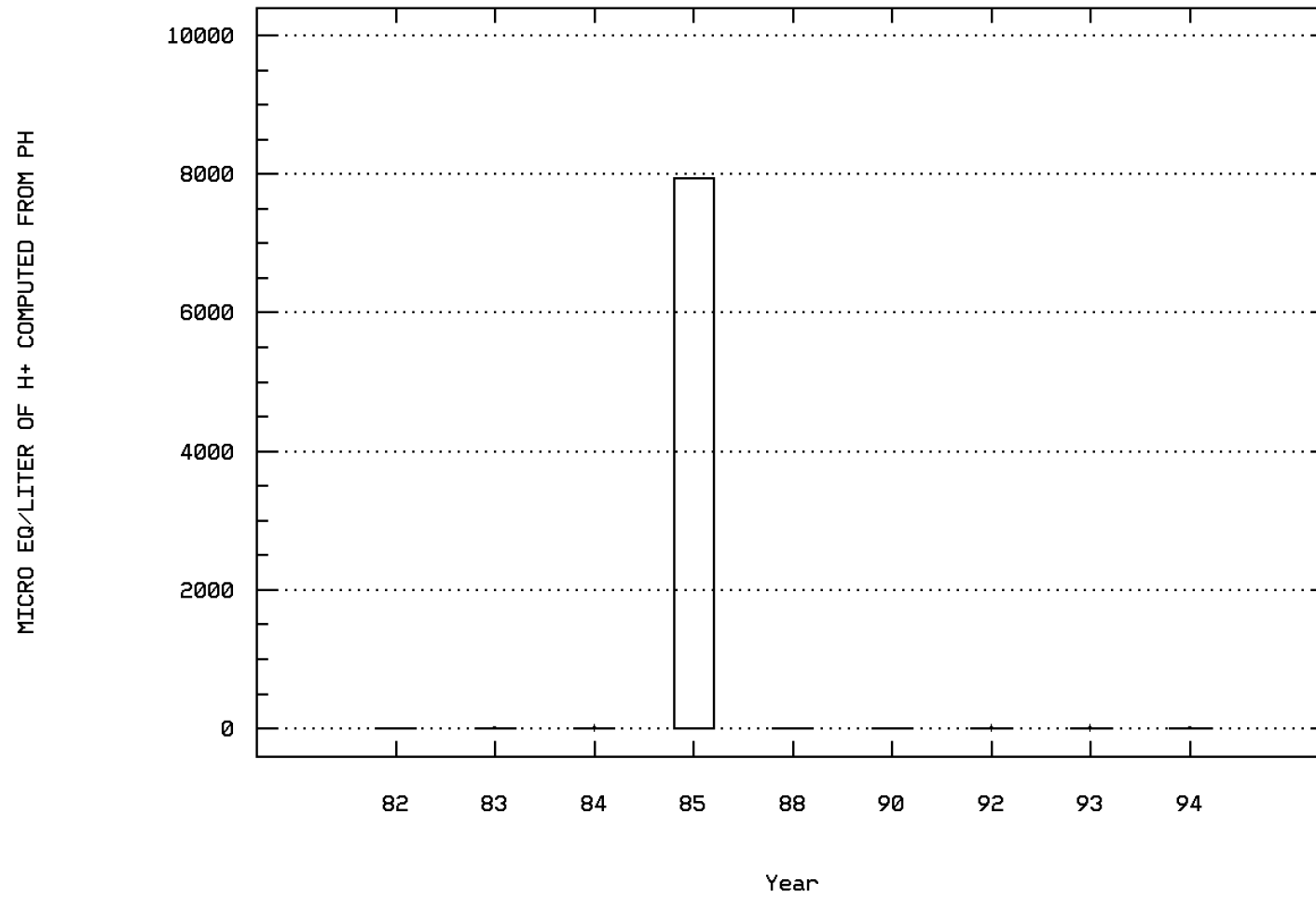
OXYGEN ,DISSOLVED, ANALYSIS BY PROBE



YOUNGS BRANCH QUARTERS 6

Station: MANA0021 Parameter Code: 00406

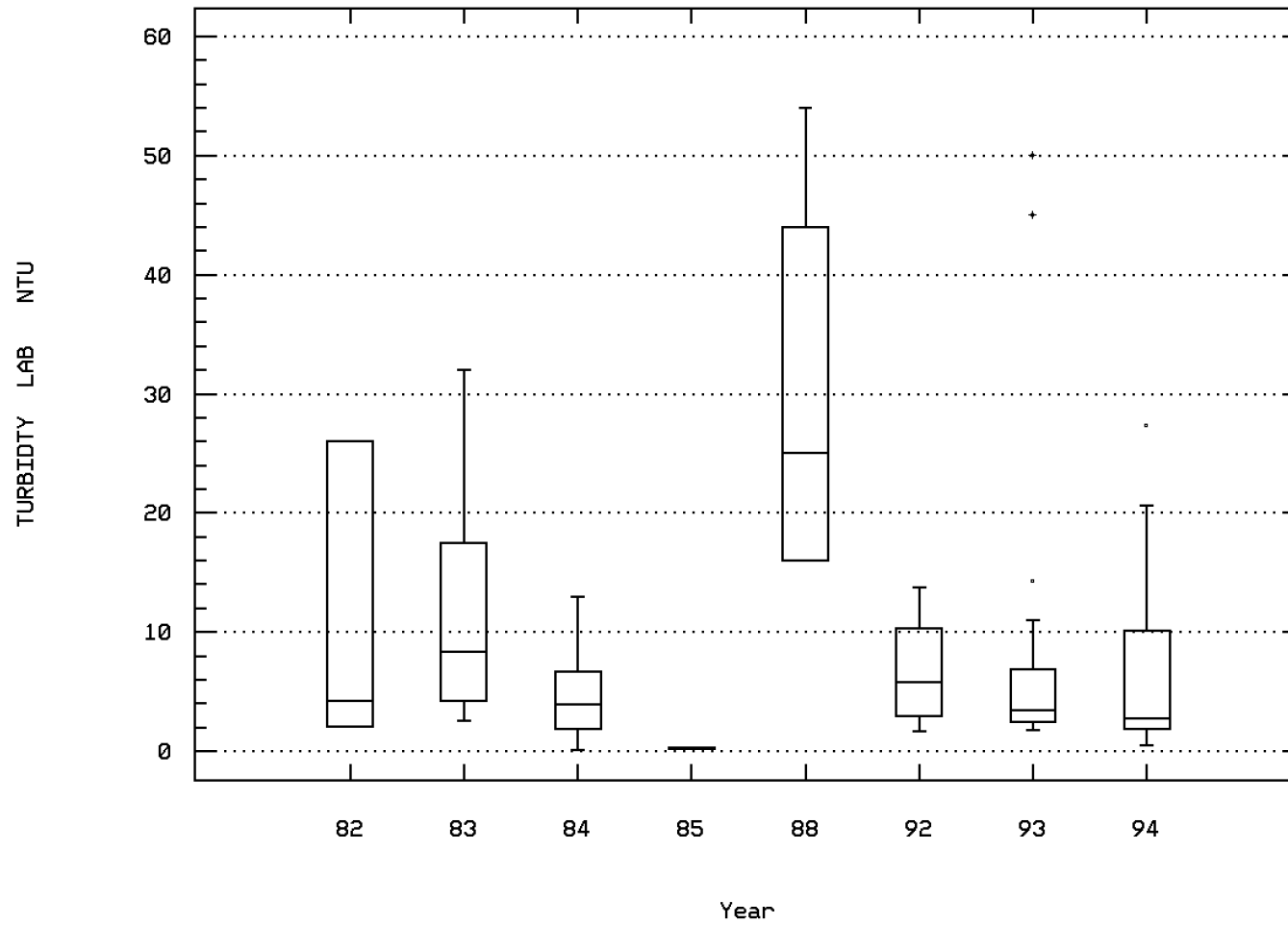
MICRO EQ/LITER OF H+ COMPUTED FROM PH



YOUNGS BRANCH QUARTERS 6

Station: MANA0021 Parameter Code: 82079

TURBIDITY,LAB NEPHELOMETRIC TURBIDITY U



YOUNGS BRANCH QUARTERS 6

### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0021

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	40	6.55	6.945	20.	-3.	34.049	5.835	1.1	3.4	11.075	14.65
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	40	215.	248.875	581.	40.	16621.24	128.923	118.2	170.75	325.	459.5
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	39	11.5	10.741	14.7	2.5	8.772	2.962	5.9	9.3	12.8	14.
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	40	7.	7.053	8.21	6.03	0.244	0.494	6.4	6.705	7.34	7.6
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	40	7.	6.81	8.21	6.03	0.305	0.552	6.4	6.705	7.34	7.6
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	40	0.1	0.155	0.933	0.006	0.034	0.184	0.025	0.046	0.197	0.398
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	36	3.	7.831	49.	0.	173.01	13.153	0.035	0.525	5.	31.6
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	15	4.	24.	160.	0.	2291.571	47.87	0.	0.	20.	133.6
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	15	0.602	0.702	2.204	0.	0.632	0.795	0.	0.	1.301	2.12
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			5.03								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	36	5.5	7.647	27.3	0.2	57.195	7.563	0.64	1.875	9.55	22.6

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0021

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	44	15.6	15.382	28.	1.6	45.557	6.75	6.	9.5	21.	24.5
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	45	202.	298.933	1346.	100.	58913.836	242.722	100.	160.	327.	674.8
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	44	9.8	9.714	13.8	4.	6.463	2.542	5.45	8.525	11.9	12.6
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	45	7.21	7.142	8.51	2.1	0.825	0.908	6.376	6.95	7.52	7.922
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	45	7.21	3.753	8.51	2.1	12.575	3.546	6.376	6.95	7.52	7.922
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	45	0.062	176.621	7943.282	0.003	1402090.152	1184.099	0.012	0.03	0.113	0.422
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	40	3.	9.461	188.	0.	882.515	29.707	0.64	2.	6.	14.4
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	16	35.	66.563	364.	0.	8755.063	93.568	0.	0.	102.5	214.2
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	16	1.542	1.245	2.561	0.	0.864	0.929	0.	0.	2.011	2.292
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			17.597								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	45	5.1	8.922	50.	0.2	105.152	10.254	2.46	2.9	11.1	16.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0021

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	25	22.	22.	28.2	14.	15.509	3.938	16.2	19.	25.75	26.48
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	25	345.	349.72	593.	115.	12723.793	112.8	199.	272.5	445.5	495.4
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	24	7.65	7.9	12.2	1.4	10.277	3.206	3.2	5.3	11.375	12.
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	25	7.4	7.402	8.77	6.3	0.257	0.507	6.76	7.04	7.735	7.932
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	25	7.4	7.134	8.77	6.3	0.332	0.576	6.76	7.04	7.735	7.932
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	25	0.04	0.073	0.501	0.002	0.011	0.103	0.012	0.018	0.092	0.175
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	18	3.	5.031	25.	0.	36.984	6.081	0.045	1.	6.75	13.3
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	9	26.	49.333	150.	8.	2106.	45.891	8.	20.	74.5	150.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	9	1.415	1.538	2.176	0.903	0.154	0.393	0.903	1.296	1.857	2.176
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			34.521								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	25	2.8	12.272	54.	0.1	284.726	16.874	1.08	1.95	20.5	48.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

## Station Inventory for Station: MANA0022

NPS Station ID: MANA0022  
 Location: CHINN BRANCH AT YOUNGS BRANCH  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC RIVER  
 RF1 Index: 02070010  
 RF3 Index: 02070010059601.50  
 Description:

LAT/LON: 38.817448/ -77.528365

Depth of Water: 0  
 Elevation: 173

RF1 Mile Point: 0.000  
 RF3 Mile Point: 4.50

Agency: 11NPSWRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): MANA\_06  
 Within Park Boundary: Yes

Date Created: 06/22/96

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.21

On/Off RF1:  
 On/Off RF3:

CHINN BRANCH JUST UPSTREAM FROM WHERE IT ENTERS YOUNGS BRANCH. SITE IS LOCATED ON THE GAINESVILLE VA 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE. IT IS THE RESPONSIBILITY OF MANASSAS NATIONAL BATTLEFIELD PARK - 6511 SUDLEY ROAD - MANASSAS VIRGINIA 22110 PH.(703)754-1861. FOR MORE INFORMATION CONTACT BARBARA MAULLER - RESOURCE MANAGEMENT - AT MANASSAS NATIONAL BATTLEFIELD PARK. DATA PROCESSED AND UPLOADED TO STORET BY RANDY SIDDENS AT NATIONAL PARK SERVICE WATER RESOURCE DIVISION IN FORT COLLINS COLORADO PH.(970)225-3556 FAX (970)225-9965.

### Parameter Inventory for Station: MANA0022

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	149	14.5	14.131	29.	-2.	64.491	8.031	4.	8.	21.	24.
00020 TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	11	18.2	18.091	28.	7.8	39.349	6.273	8.04	13.	21.5	27.6
00045 PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	20	0.	0.158	1.62	0.	0.14	0.375	0.	0.	0.178	0.56
00061 FLOW, STREAM, INSTANTANEOUS CFS	04/12/87-11/01/90	33	0.07	0.51	6.	0.	1.555	1.247	0.	0.015	0.3	1.6
00064 DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	25	0.3	0.464	1.9	0.1	0.195	0.441	0.1	0.2	0.65	1.16
00094 SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	150	203.	257.627	1070.	65.	20470.289	143.074	120.	150.	360.	459.1
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	143	11.4	10.404	15.8	1.5	12.84	3.583	3.8	8.6	13.	14.26
00406 PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	150	7.295	7.219	8.6	5.8	0.218	0.467	6.544	6.993	7.513	7.8
00406 CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	150	7.295	6.941	8.6	5.8	0.296	0.544	6.544	6.993	7.512	7.8
00406 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	150	0.051	0.115	1.585	0.003	0.037	0.193	0.016	0.031	0.102	0.286
00480 SALINITY - PARTS PER THOUSAND	03/07/87-11/01/90	41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	108	2.	6.119	214.	0.	441.513	21.012	0.05	0.45	6.	11.
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	5	0.21	0.314	0.76	0.12	0.066	0.258	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	2	0.555	0.555	0.6	0.51	0.004	0.064	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	54	1.	14.815	150.	0.	883.55	29.725	0.	0.	16.5	47.5
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	54	0.	0.574	2.176	0.	0.511	0.715	0.	0.	1.217	1.674
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			3.753								
82079 TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	143	4.4	21.576	206.	0.2	1260.543	35.504	0.6	1.4	19.	90.
85663 FLOW, RATE FT/SEC	01/23/92-11/13/94	52	0.6	0.754	2.19	0.05	0.396	0.629	0.072	0.2	1.365	1.691

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0022

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	143	15	0.10	47	3	0.06	63	4	0.06	33	8	0.24			
00406 PH, FIELD	Other-Hi Lim.	9.	150	0	0.00	49	0	0.00	64	0	0.00	37	0	0.00			
	Other-Lo Lim.	6.5	150	14	0.09	49	9	0.18	64	2	0.03	37	3	0.08			
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	5	0	0.00	1	0	0.00	1	0	0.00	3	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	54	0	0.00	22	0	0.00	18	0	0.00	14	0	0.00			
82079 TURBIDITY, LAB	Other-Hi Lim.	50.	143	25	0.17	44	1	0.02	63	16	0.25	36	8	0.22			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### Annual Analysis for 1982 - Station MANA0022

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	3	10.	7.167	10.5	1.	28.583	5.346	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	3	210.	210.	270.	150.	3600.	60.	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	3	10.8	11.733	13.8	10.6	3.213	1.793	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	3	7.3	7.367	7.6	7.2	0.043	0.208	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	3	7.3	7.336	7.6	7.2	0.045	0.211	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	3	0.05	0.046	0.063	0.025	0.	0.019	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	3	2.	2.667	4.	2.	1.333	1.155	**	**	**
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	3	2.4	7.7	19.	1.7	95.89	9.792	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1983 - Station MANA0022

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	25	9.	10.192	21.	-2.	50.563	7.111	3.48	4.75	18.5
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	26	190.	259.615	490.	100.	21683.846	147.254	100.	135.	437.5
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	20	11.9	11.32	14.	8.6	2.621	1.619	9.11	9.625	12.4
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	26	7.2	7.142	7.9	6.3	0.159	0.399	6.5	6.9	7.4
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	26	7.2	6.961	7.9	6.3	0.193	0.44	6.5	6.9	7.4
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	26	0.063	0.109	0.501	0.013	0.013	0.115	0.02	0.04	0.126
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	26	2.	3.188	16.	0.05	17.983	4.241	0.05	0.05	5.25
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	26	4.7	5.892	17.5	0.4	25.052	5.005	0.9	1.5	9.725

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1984 - Station MANA0022

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	25	10.	11.36	25.	-2.	74.573	8.636	3.2	7.25	19.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	25	230.	244.6	400.	120.	7722.75	87.879	140.	165.	335.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	24	10.5	10.667	15.	7.2	6.048	2.459	7.9	8.275	12.7
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	25	7.1	7.112	8.1	6.3	0.124	0.353	6.62	6.95	7.35
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	25	7.1	6.974	8.1	6.3	0.144	0.38	6.62	6.95	7.35
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	25	0.079	0.106	0.501	0.008	0.011	0.104	0.04	0.045	0.113
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	24	0.5	1.827	9.	0.05	7.327	2.707	0.05	0.05	2.
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	25	1.7	3.848	24.	0.4	33.428	5.782	0.4	0.6	4.1

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1985 - Station MANA0022

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	3	5.5	7.767	14.	3.8	29.863	5.465	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	3	105.	111.667	130.	100.	258.333	16.073	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	3	12.6	12.233	13.2	10.9	1.423	1.193	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	3	7.1	7.133	7.3	7.	0.023	0.153	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	3	7.1	7.116	7.3	7.	0.024	0.154	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	3	0.079	0.077	0.1	0.05	0.001	0.025	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	3	4.	3.017	5.	0.05	6.851	2.617	**	**	**
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	3	0.2	0.233	0.3	0.2	0.003	0.058	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1987 - Station MANA0022

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	25	22.	19.7	29.	6.	48.917	6.994	8.6	13.	25.	28.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	25	190.	225.8	450.	70.	13747.25	117.249	108.	120.	352.5	395.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	25	14.2	14.268	15.8	11.5	0.638	0.799	13.66	14.	14.65	15.38
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	25	7.39	7.464	8.	7.09	0.078	0.279	7.126	7.22	7.7	7.882
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	25	7.39	7.388	8.	7.09	0.084	0.289	7.126	7.22	7.7	7.882
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	25	0.041	0.041	0.081	0.01	0.	0.022	0.013	0.02	0.06	0.075
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	23	92.	88.522	98.	38.	151.352	12.303	76.4	88.	96.	96.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1988 - Station MANA0022

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	12	19.5	19.667	26.	10.	29.515	5.433	10.3	16.25	24.75	25.7
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	12	180.	217.5	425.	65.	10815.909	104.	81.5	150.	307.5	396.5
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	12	12.05	12.3	13.7	11.3	0.564	0.751	11.36	11.925	12.625	13.7
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	12	7.4	7.458	7.8	7.2	0.048	0.219	7.2	7.3	7.675	7.8
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	12	7.4	7.412	7.8	7.2	0.05	0.225	7.2	7.3	7.675	7.8
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	12	0.04	0.039	0.063	0.016	0.	0.017	0.016	0.021	0.05	0.063
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	11	28.	46.364	206.	16.	2979.055	54.581	16.	16.	46.	175.6

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1990 - Station MANA0022

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	4	12.5	13.375	20.	8.5	23.729	4.871	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	4	217.5	238.75	360.	160.	7772.917	88.164	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	4	5.15	5.1	6.3	3.8	1.127	1.061	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	4	7.41	7.425	7.62	7.26	0.027	0.165	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	4	7.401	7.402	7.62	7.26	0.028	0.167	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	4	0.04	0.04	0.055	0.024	0.	0.014	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1992 - Station MANA0022

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	12	12.55	12.683	22.5	1.8	49.52	7.037	2.61	6.425	18.7	22.29
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	12	168.	187.833	365.	110.	4319.606	65.724	118.7	150.	214.75	321.5
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	12	10.75	10.817	13.	8.5	2.056	1.434	8.59	9.6	12.15	12.82
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	12	7.6	7.452	8.6	6.4	0.432	0.658	6.442	6.888	7.875	8.45
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	12	7.589	7.042	8.6	6.4	0.616	0.785	6.442	6.887	7.875	8.45
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	12	0.026	0.091	0.398	0.003	0.016	0.127	0.004	0.013	0.13	0.365
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	12 ##	4.25	5.167	11.	2.5	10.015	3.165	2.5	2.5	7.5	10.7
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	12	3.	4.35	9.8	1.2	10.192	3.192	1.2	1.475	7.65	9.53

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot



### Annual Analysis for 1993 - Station MANA0022

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	21	18.5	15.752	28.5	1.2	69.117	8.314	3.2	8.75	21.75	26.82
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	21	334.	321.524	539.	121.	20482.562	143.117	146.4	175.	455.5	514.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	21	3.8	5.752	12.5	1.5	15.365	3.92	1.6	2.65	10.	12.08
00406p	PH, FIELD, STANDARD UNITS SU	21	7.35	7.328	8.42	6.3	0.276	0.525	6.46	7.02	7.645	7.914
00406p	CONVERTED PH, FIELD, STANDARD UNITS	21	7.35	7.019	8.42	6.3	0.376	0.613	6.46	7.02	7.645	7.914
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	21	0.045	0.096	0.501	0.004	0.017	0.132	0.012	0.023	0.099	0.35
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	21	5.	18.	214.	1.	2089.4	45.71	1.	2.	13.	30.
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	21	2.4	6.89	59.	0.3	182.722	13.517	0.32	1.1	4.85	25.98

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

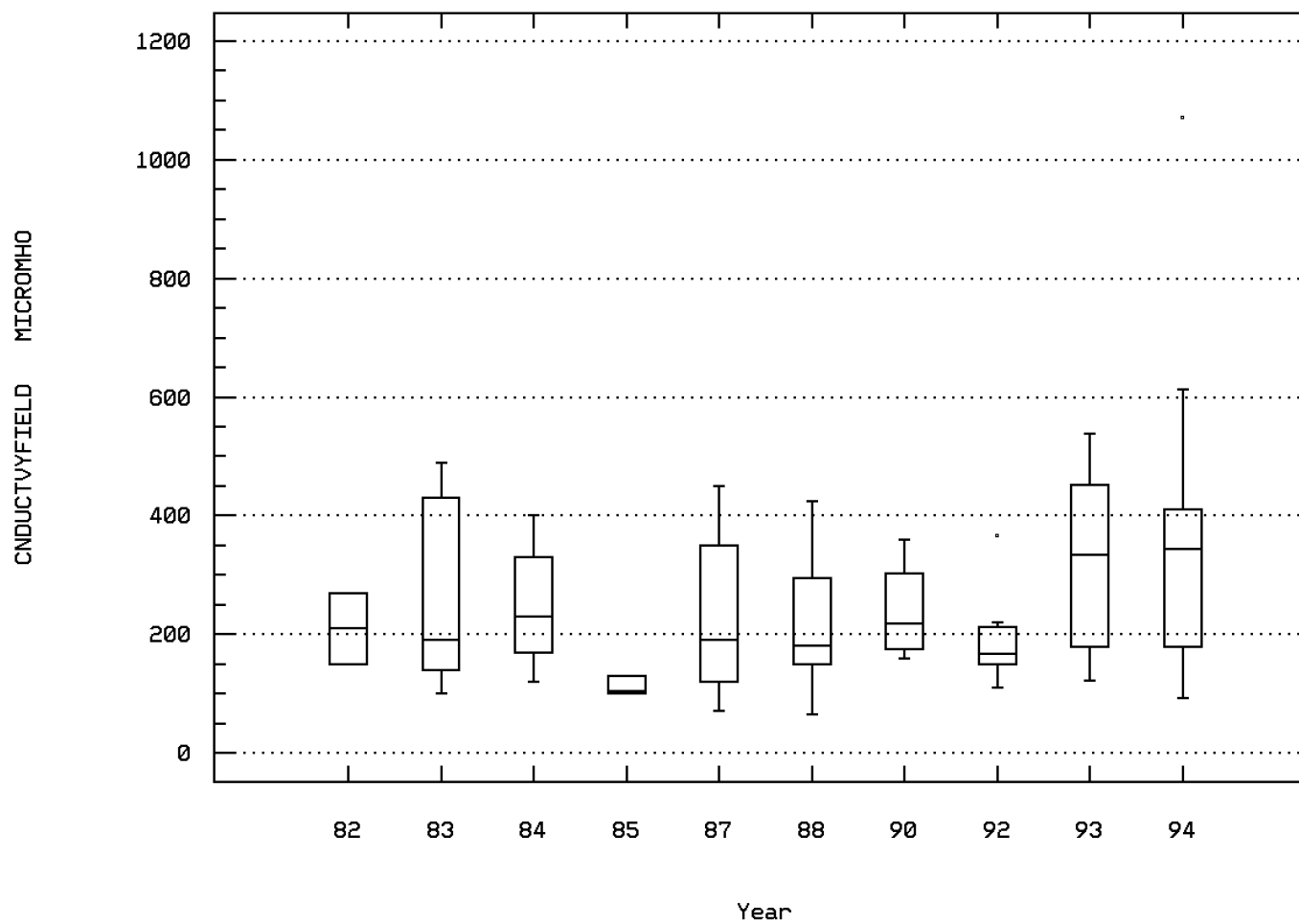
### Annual Analysis for 1994 - Station MANA0022

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	19	14.	13.521	23.	1.	47.111	6.864	4.	8.	20.	22.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	19	344.	347.263	1070.	92.	53751.871	231.844	127.	178.	410.	612.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	19	8.8	8.326	12.8	3.	9.396	3.065	3.2	6.6	10.8	12.6
00406p	PH, FIELD, STANDARD UNITS SU	19	6.7	6.674	7.3	5.8	0.179	0.423	5.9	6.5	6.9	7.3
00406p	CONVERTED PH, FIELD, STANDARD UNITS	19	6.7	6.461	7.3	5.8	0.226	0.476	5.9	6.5	6.9	7.3
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	19	0.2	0.346	1.585	0.05	0.175	0.418	0.05	0.126	0.316	1.259
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	19	1.	4.053	28.	0.	51.275	7.161	0.	1.	2.	17.
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	19	1.6	3.642	12.5	0.5	14.119	3.758	0.9	1.	5.6	11.2

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0022 Parameter Code: 00094

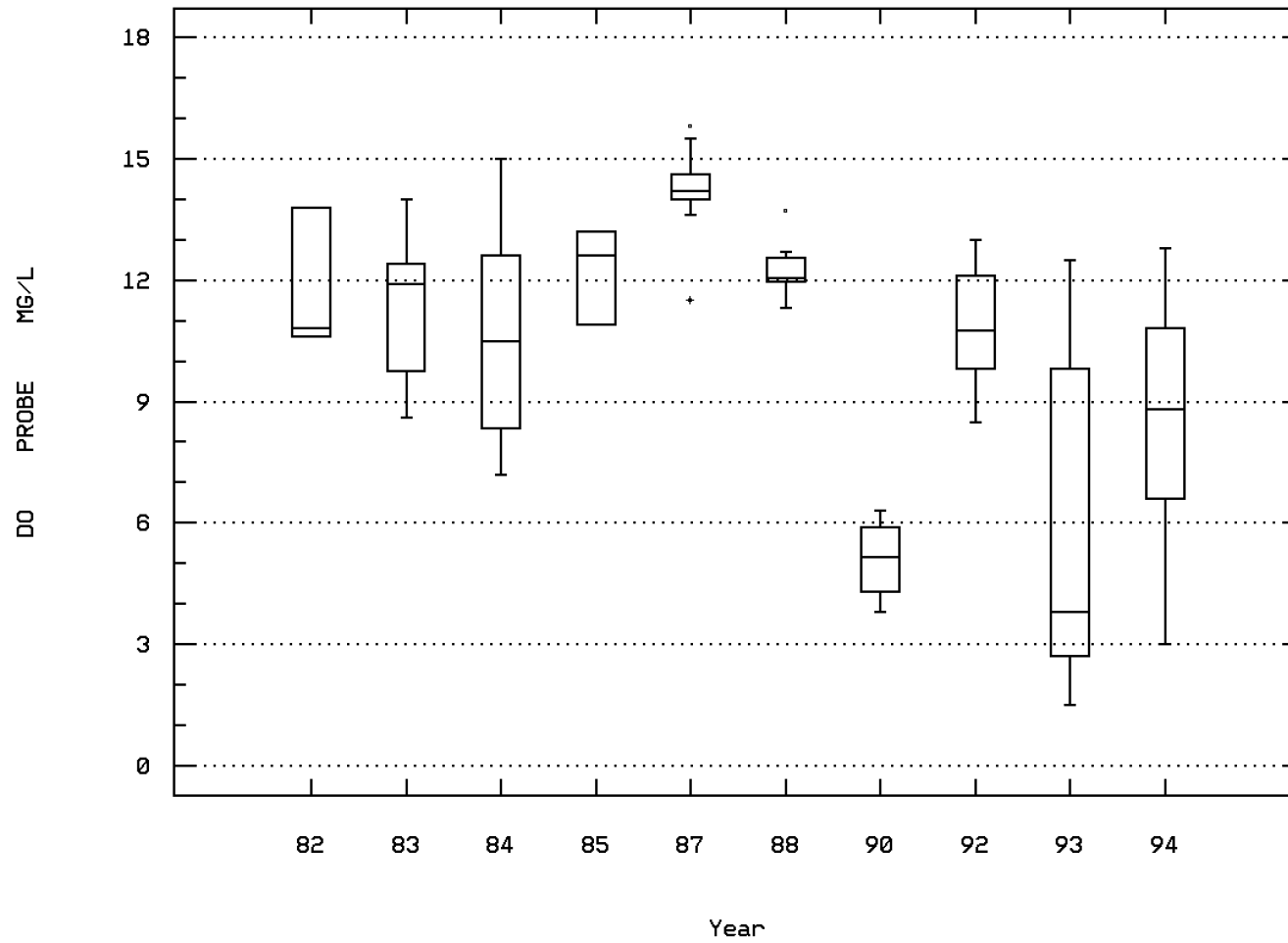
SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @



CHINN BRANCH AT YOUNGS BRANCH

Station: MANA0022 Parameter Code: 00299

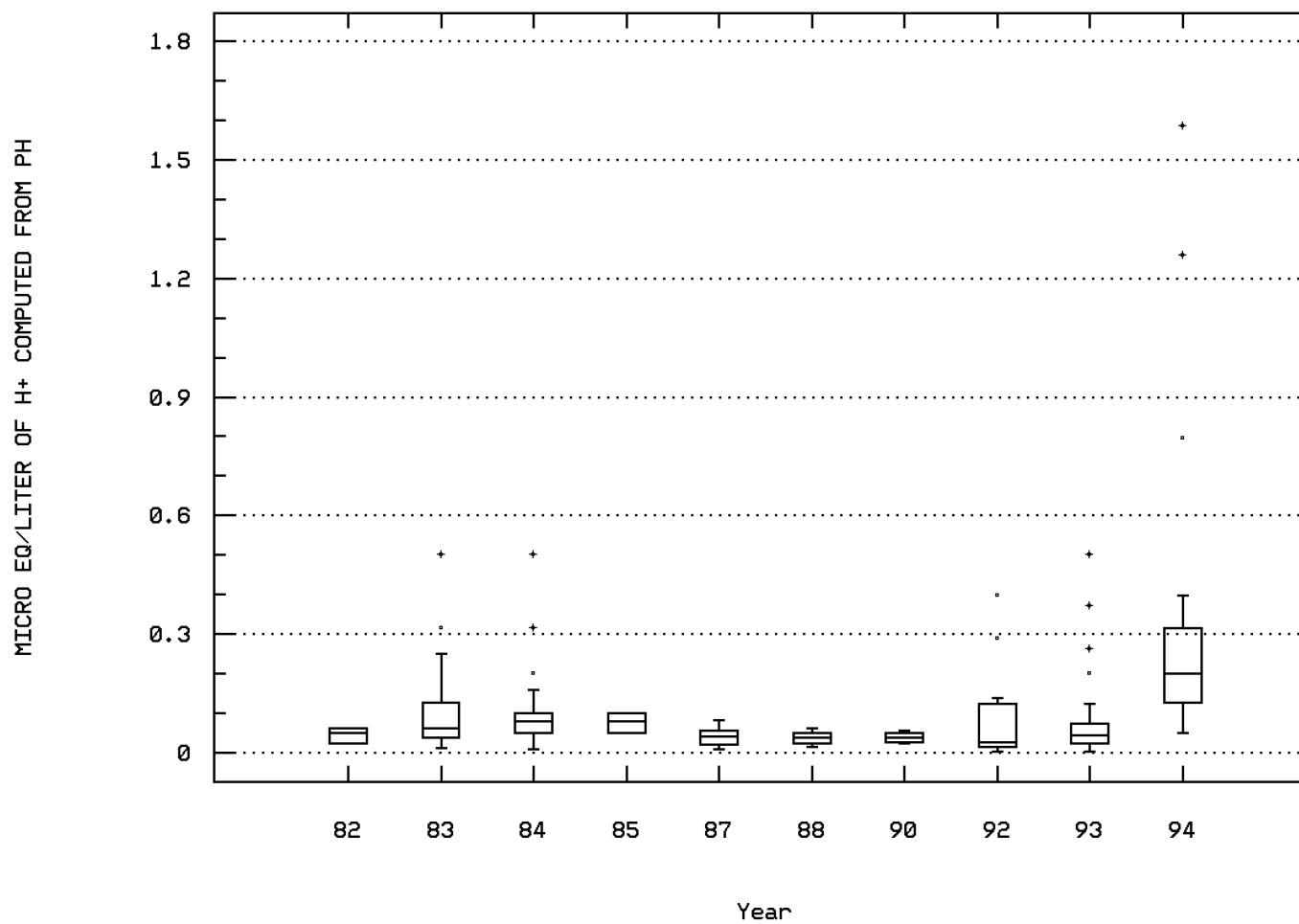
OXYGEN ,DISSOLVED, ANALYSIS BY PROBE



CHINN BRANCH AT YOUNGS BRANCH

Station: MANA0022 Parameter Code: 00406

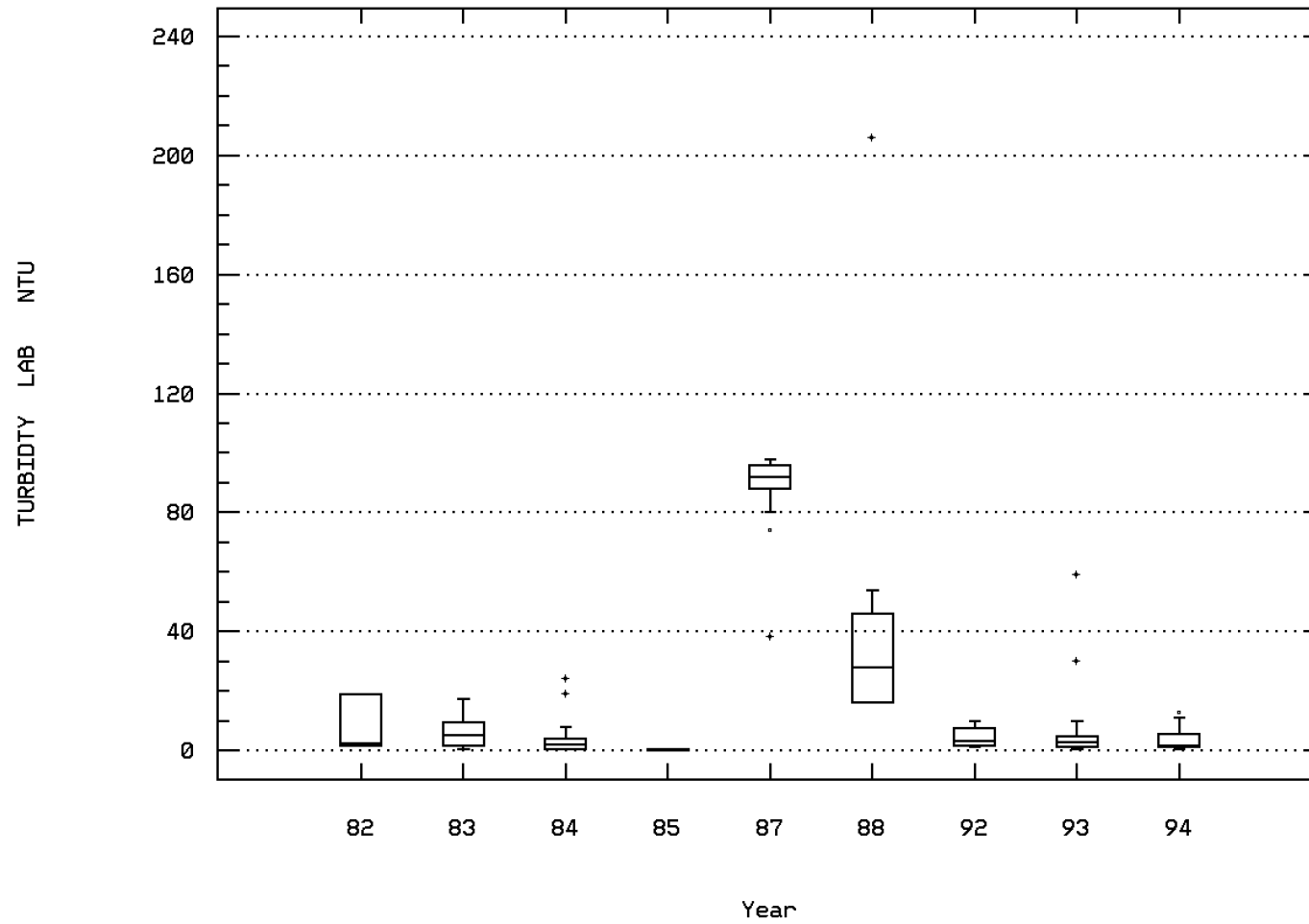
MICRO EQ/LITER OF H+ COMPUTED FROM PH



CHINN BRANCH AT YOUNGS BRANCH

Station: MANA0022 Parameter Code: 82079

TURBIDITY,LAB NEPHELOMETRIC TURBIDITY U



CHINN BRANCH AT YOUNGS BRANCH

### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0022

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	49	7.	6.712	20.	-2.	28.612	5.349	1.8	4.	10.2	13.5
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	49	190.	218.98	460.	92.	11613.895	107.768	105.	140.	277.5	391.
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	47	11.8	10.936	15.5	2.7	9.618	3.101	5.36	9.8	12.8	14.36
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	49	7.1	7.015	7.75	6.3	0.15	0.388	6.43	6.7	7.3	7.6
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	49	7.1	6.847	7.75	6.3	0.179	0.424	6.43	6.7	7.3	7.6
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	49	0.079	0.142	0.501	0.018	0.017	0.131	0.025	0.05	0.2	0.372
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	42	2.	4.536	28.	0.	37.106	6.091	0.05	0.1	6.25	11.
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	22	0.	4.182	53.	0.	140.156	11.839	0.	0.	2.	17.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	22	0.	0.232	1.724	0.	0.233	0.483	0.	0.	0.301	1.211
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			1.706								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	44	3.45	6.768	88.	0.2	179.76	13.407	0.35	1.125	7.7	13.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0022

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	64	16.5	15.659	29.	1.2	46.445	6.815	6.25	9.125	21.	24.
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	64	187.5	233.953	1070.	65.	25057.347	158.295	120.	133.75	300.	390.
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	63	11.9	10.898	15.8	1.5	10.878	3.298	5.76	9.1	13.7	14.42
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	64	7.3	7.318	8.6	6.3	0.178	0.422	6.75	7.	7.557	7.885
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	64	7.3	7.125	8.6	6.3	0.216	0.465	6.75	7.	7.557	7.885
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	64	0.05	0.075	0.501	0.003	0.007	0.083	0.013	0.028	0.1	0.179
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	43	2.	8.222	214.	0.	1051.675	32.43	0.05	0.6	5.	9.
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	18	12.5	27.167	150.	0.	1900.618	43.596	0.	0.	31.75	126.6
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	18	1.079	0.864	2.176	0.	0.647	0.804	0.	0.	1.497	2.102
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			7.31								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	63	7.3	28.208	98.	0.2	1371.738	37.037	1.	2.1	59.	93.2

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0022

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	36	21.3	21.511	28.	14.	12.519	3.538	17.35	19.	24.75	26.37
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	37	355.	349.757	539.	140.	13635.689	116.772	154.	265.	455.	490.
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	33	8.8	8.703	14.8	1.5	18.195	4.266	2.42	4.15	12.05	14.22
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	37	7.3	7.318	8.42	5.8	0.306	0.553	6.5	7.2	7.685	7.884
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	37	7.3	6.836	8.42	5.8	0.546	0.739	6.5	7.2	7.685	7.884
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	37	0.05	0.146	1.585	0.004	0.114	0.338	0.013	0.021	0.063	0.36
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	23	2.	5.076	31.	0.	55.897	7.476	0.05	1.	8.	15.6
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	14	8.	15.643	74.	0.	487.016	22.068	0.	0.	25.	58.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	14	0.903	0.74	1.869	0.	0.519	0.72	0.	0.	1.376	1.746
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			5.496								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	36	2.4	28.067	206.	0.4	2065.265	45.445	0.54	0.925	45.5	92.6

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

## Station Inventory for Station: MANA0023

NPS Station ID: MANA0023  
 Location: 50U 84F  
 Station Type: /TYPA/AMBNT/SPRING  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070008  
 Major Basin:  
 Minor Basin:  
 RF1 Index: 02070008  
 RF3 Index: 02070010012200.00  
 Description:

LAT/LON: 38.805838/ -77.531116

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 0.00

Agency: 112WRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): 384822077315101  
 Within Park Boundary: Yes

Date Created: 12/02/81

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 3.30  
 Distance from RF3: 0.06

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0023

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	06/24/80-06/24/80	1	14.5	14.5	14.5	14.5	0.	0.	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	06/24/80-06/24/80	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	06/24/80-06/24/80	1	620.	620.	620.	620.	0.	0.	**	**	**	**
00400 PH (STANDARD UNITS)	06/24/80-06/24/80	1	7.7	7.7	7.7	7.7	0.	0.	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	06/24/80-06/24/80	1	7.7	7.7	7.7	7.7	0.	0.	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/24/80-06/24/80	1	0.02	0.02	0.02	0.02	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	06/24/80-06/24/80	1	210.	210.	210.	210.	0.	0.	**	**	**	**
00613 NITRITE NITROGEN, DISSOLVED (MG/L AS N)	06/24/80-06/24/80	1	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	06/24/80-06/24/80	1	0.07	0.07	0.07	0.07	0.	0.	**	**	**	**
00631 NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	06/24/80-06/24/80	1	0.08	0.08	0.08	0.08	0.	0.	**	**	**	**
00660 PHOSPHATE, ORTHO (MG/L AS PO4)	06/24/80-06/24/80	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/24/80-06/24/80	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	06/24/80-06/24/80	1	260.	260.	260.	260.	0.	0.	**	**	**	**
00902 HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	06/24/80-06/24/80	1	48.	48.	48.	48.	0.	0.	**	**	**	**
00915 CALCIUM, DISSOLVED (MG/L AS Ca)	06/24/80-06/24/80	1	62.	62.	62.	62.	0.	0.	**	**	**	**
00925 MAGNESIUM, DISSOLVED (MG/L AS Mg)	06/24/80-06/24/80	1	25.	25.	25.	25.	0.	0.	**	**	**	**
00930 SODIUM, DISSOLVED (MG/L AS Na)	06/24/80-06/24/80	1	26.	26.	26.	26.	0.	0.	**	**	**	**
00931 SODIUM ADSORPTION RATIO	06/24/80-06/24/80	1	0.7	0.7	0.7	0.7	0.	0.	**	**	**	**
00932 SODIUM, PERCENT	06/24/80-06/24/80	1	18.	18.	18.	18.	0.	0.	**	**	**	**
00935 POTASSIUM, DISSOLVED (MG/L AS K)	06/24/80-06/24/80	1	1.	1.	1.	1.	0.	0.	**	**	**	**
00940 CHLORIDE, TOTAL IN WATER MG/L	06/24/80-06/24/80	1	9.	9.	9.	9.	0.	0.	**	**	**	**
00945 SULFATE, TOTAL (MG/L AS SO4)	06/24/80-06/24/80	1	100.	100.	100.	100.	0.	0.	**	**	**	**
00950 FLUORIDE, DISSOLVED (MG/L AS F)	06/24/80-06/24/80	1	0.2	0.2	0.2	0.2	0.	0.	**	**	**	**
00955 SILICA, DISSOLVED (MG/L AS SiO2)	06/24/80-06/24/80	1	27.	27.	27.	27.	0.	0.	**	**	**	**
01046 IRON, DISSOLVED (UG/L AS Fe)	06/24/80-06/24/80	1	10.	10.	10.	10.	0.	0.	**	**	**	**
70300 RESIDUE, TOTAL FILTRABLE (DRIED AT 180C), MG/L	06/24/80-06/24/80	1	409.	409.	409.	409.	0.	0.	**	**	**	**
70301 SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	06/24/80-06/24/80	1	377.	377.	377.	377.	0.	0.	**	**	**	**
70303 SOLIDS, DISSOLVED-TONS PER ACRE-FT	06/24/80-06/24/80	1	0.56	0.56	0.56	0.56	0.	0.	**	**	**	**
71851 NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	06/24/80-06/24/80	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
71856 NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	06/24/80-06/24/80	1	0.03	0.03	0.03	0.03	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0023

Parameter	Std. Type	Std. Value	Total			-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
			Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00400 PH	Other-Hi Lim.	9.	1	0	0.00				1	0	0.00						
	Other-Lo Lim.	6.5	1	0	0.00				1	0	0.00						
00613 NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	1	0	0.00				1	0	0.00						
00618 NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	1	0	0.00				1	0	0.00						
00631 NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	1	0	0.00				1	0	0.00						
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	1	0	0.00				1	0	0.00						
	Drinking Water	250.	1	0	0.00				1	0	0.00						
00945 SULFATE, TOTAL (AS SO4)	Drinking Water	250.	1	0	0.00				1	0	0.00						
00950 FLUORIDE, DISSOLVED AS F	Drinking Water	4.	1	0	0.00				1	0	0.00						
71851 NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	1	0	0.00				1	0	0.00						
71856 NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	1	0	0.00				1	0	0.00						

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter



## Station Inventory for Station: MANA0024

NPS Station ID: MANA0024  
 Location: BULL RUN SUDLEY SPRINGS  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC RIVER  
 RF1 Index: 02070010  
 RF3 Index: 02070010059601.50  
 Description:

LAT/LON: 38.842003/ -77.537142

Depth of Water: 0  
 Elevation: 170

RF1 Mile Point: 0.000  
 RF3 Mile Point: 4.50

Agency: 11NPSWRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): MANA\_09  
 Within Park Boundary: Yes

Date Created: 06/22/96

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.21

On/Off RF1:  
 On/Off RF3:

BULL RUN AT ENTRANCE OF PARK AT SUDLEY SPRINGS AND JUST DOWNSTREAM FROM CONFLUENCE WITH LITTLE BULL RUN.  
 SITE IS LOCATED ON THE GAINESVILLE VA 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE. IT IS THE RESPONSIBILITY OF MANASSAS NATIONAL BATTLEFIELD  
 PARK - 6511 SUDLEY ROAD - MANASSAS VIRGINIA 22110 PH.(703)754-1861. FOR MORE INFORMATION CONTACT BARBARA MAULLER - RESOURCE MANAGEMENT -  
 AT MANASSAS NATIONAL BATTLEFIELD PARK. DATA PROCESSED AND UPLOADED TO STORET BY RANDY SIDDENS AT NATIONAL PARK SERVICE WATER RESOURCE DIVISION  
 IN FORT COLLINS COLORADO PH.(970)225-3556 FAX (970)225-9965.

## Parameter Inventory for Station: MANA0024

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	134	16.	15.335	30.	-3.	72.226	8.499	4.	9.5	23.	26.05
00020 TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	11	19.5	18.227	26.5	6.	46.918	6.85	6.7	12.	25.	26.4
00045 PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	20	0.	0.158	1.62	0.	0.14	0.375	0.	0.	0.178	0.56
00061 FLOW, STREAM, INSTANTANEOUS CFS	04/12/87-11/01/90	30	11.	44.977	465.	0.05	9548.552	97.717	0.05	3.	44.75	91.6
00064 DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	25	0.8	1.02	5.6	0.1	1.125	1.061	0.16	0.55	1.1	1.82
00094 SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	135	121.	149.333	744.	60.	8108.418	90.047	90.	100.	160.	225.2
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	133	11.2	10.832	15.9	3.9	8.498	2.915	6.8	8.2	13.4	14.3
00406 PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	135	7.4	7.386	8.84	5.77	0.292	0.54	6.7	7.	7.7	8.084
00406 CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	135	7.4	7.057	8.84	5.77	0.401	0.633	6.7	7.	7.7	8.084
00406 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	135	0.04	0.088	1.698	0.001	0.03	0.173	0.008	0.02	0.1	0.2
00480 SALINITY - PARTS PER THOUSAND	03/14/87-11/01/90	40	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	93	3.	16.904	320.	0.	2607.943	51.068	0.05	1.5	7.5	23.2
00630 NITRITE PLUS NITRATE, TOTAL I DET. (MG/L AS N)	08/08/93-10/27/94	5	0.24	0.514	0.99	0.18	0.174	0.417	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	2	0.31	0.31	0.44	0.18	0.034	0.184	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	39	18.	40.821	210.	0.	3294.046	57.394	0.	0.	64.	163.
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	39	1.255	1.065	2.322	0.	0.679	0.824	0.	0.	1.806	2.212
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			11.603								
82079 TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	130	9.45	28.157	206.	0.1	1345.471	36.681	1.7	3.35	38.65	90.
85663 FLOW, RATE FT/SEC	01/23/92-11/13/94	52	1.075	1.233	3.61	0.	1.049	1.024	0.056	0.313	1.975	2.814

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0024

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE					Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00406	PH, FIELD																
	Other-Lo Lim.	4.	133	2	0.02	41	1	0.02	60	1	0.02	32	0	0.00			
	Other-Hi Lim.	9.	135	0	0.00	42	0	0.00	61	0	0.00	32	0	0.00			
	Other-Lo Lim.	6.5	135	7	0.05	42	4	0.10	61	2	0.03	32	1	0.03			
00630	NITRITE PLUS NITRATE, TOTAL 1 DET.																
	Drinking Water	10.	5	0	0.00	1	0	0.00	1	0	0.00	3	0	0.00			
31616	FECAL COLIFORM, MEMBRANE FILTER, BROTH																
	Other-Hi Lim.	200.	39	2	0.05	15	1	0.07	15	1	0.07	9	0	0.00			
82079	TURBIDITY, LAB																
	Other-Hi Lim.	50.	130	29	0.22	37	2	0.05	61	18	0.30	32	9	0.28			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### Annual Analysis for 1982 - Station MANA0024

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	2	10.	10.	10.	0.	0.	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	3	150.	153.333	160.	150.	33.333	5.774	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	3	11.	12.	14.1	10.9	3.31	1.819	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	3	7.2	7.2	7.4	7.	0.04	0.2	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	3	7.2	7.17	7.4	7.	0.041	0.203	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	3	0.063	0.068	0.1	0.04	0.001	0.03	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	3	3.	3.4	7.	0.2	11.68	3.418	**	**	**
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	3	6.4	13.767	33.	1.9	282.503	16.808	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1983 - Station MANA0024

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	11	6.	8.627	22.	1.5	50.012	7.072	1.52	2.3	16.	21.2
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	11	110.	122.727	170.	100.	641.818	25.334	100.	100.	150.	166.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	11	12.	11.5	14.2	8.5	3.472	1.863	8.6	9.6	13.1	14.04
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	11	7.1	7.173	8.2	6.5	0.224	0.473	6.54	6.8	7.4	8.1
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	11	7.1	6.99	8.2	6.5	0.261	0.511	6.54	6.8	7.4	8.1
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	11	0.079	0.102	0.316	0.006	0.008	0.091	0.009	0.04	0.158	0.293
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	11	5.	6.009	22.	0.05	45.08	6.714	0.05	2.	9.	20.4
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	11	6.4	13.764	41.	2.2	206.953	14.386	2.44	3.7	27.	40.2

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1984 - Station MANA0024

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	25	12.	12.26	27.5	-3.	85.023	9.221	3.6	8.25	19.75	24.5
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	25	120.	112.32	140.	90.	180.81	13.447	90.	100.	120.	128.8
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	24	10.4	10.554	15.	7.7	5.749	2.398	7.85	8.2	12.35	14.3
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	25	7.3	7.276	7.9	6.7	0.108	0.328	6.76	7.	7.5	7.74
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	25	7.3	7.16	7.9	6.7	0.122	0.349	6.76	7.	7.5	7.74
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	25	0.05	0.069	0.2	0.013	0.003	0.053	0.018	0.032	0.1	0.175
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	24	1.3	5.344	44.	0.05	113.702	10.663	0.05	0.15	4.75	22.5
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	25	4.5	8.5	40.	0.1	115.351	10.74	0.7	1.6	10.65	30.9

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1985 - Station MANA0024

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	3	7.5	8.5	14.2	3.8	27.79	5.272	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	3	90.	88.333	100.	75.	158.333	12.583	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	3	12.9	12.5	13.5	11.1	1.56	1.249	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	3	7.2	7.233	7.7	6.8	0.203	0.451	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	3	7.2	7.094	7.7	6.8	0.232	0.482	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	3	0.063	0.081	0.158	0.02	0.005	0.071	**	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	3	7.	6.333	10.	2.	16.333	4.041	**	**	**	**
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	3	0.2	0.167	0.2	0.1	0.003	0.058	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1987 - Station MANA0024

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	25	23.	20.2	30.	6.	57.167	7.561	7.8	13.	25.5	29.4
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	25	115.	145.	490.	60.	11112.5	105.416	68.	85.	152.5	318.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	24	14.3	14.404	15.9	13.	0.426	0.652	13.65	14.025	14.8	15.4
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	25	7.55	7.605	8.7	7.03	0.141	0.376	7.176	7.355	7.78	8.14
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	25	7.55	7.49	8.7	7.03	0.155	0.394	7.176	7.355	7.78	8.14
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	25	0.028	0.032	0.093	0.002	0.	0.021	0.009	0.017	0.044	0.067
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	24	90.	86.042	98.	30.	275.694	16.604	60.	86.5	93.5	97.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1988 - Station MANA0024

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	12	21.5	20.5	26.	11.	28.818	5.368	11.	17.5	25.	26.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	12	120.	185.417	450.	80.	15956.629	126.32	81.5	95.	306.25	423.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	12	12.1	12.425	14.	11.2	0.838	0.916	11.26	11.925	13.35	13.94
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	12	7.5	7.528	8.09	6.8	0.155	0.393	6.86	7.303	7.89	8.069
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	12	7.5	7.361	8.09	6.8	0.185	0.431	6.86	7.302	7.89	8.069
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	12	0.032	0.044	0.158	0.008	0.002	0.044	0.009	0.013	0.05	0.141
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	12	28.	47.083	206.	16.	2906.083	53.908	16.	17.	51.5	169.4

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1990 - Station MANA0024

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	4	10.7	12.475	19.	9.5	19.269	4.39	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	4	104.5	110.	135.	96.	294.	17.146	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	4	6.45	5.925	6.8	4.	1.676	1.295	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	4	7.225	7.18	8.5	5.77	1.645	1.283	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	4	6.739	6.287	8.5	5.77	2.709	1.646	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	4	0.182	0.517	1.698	0.003	0.648	0.805	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1992 - Station MANA0024

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	12	13.85	13.383	22.1	2.	39.274	6.267	3.2	8.65	19.55	21.47
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	12	138.5	181.	744.	90.	32368.	179.911	90.9	96.	160.5	576.6
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	12	10.5	10.067	11.8	7.4	2.128	1.459	7.52	9.1	11.15	11.77
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	12	7.05	7.09	7.8	6.5	0.167	0.409	6.539	6.715	7.3	7.77
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	12	7.047	6.937	7.8	6.5	0.193	0.439	6.539	6.715	7.3	7.77
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	12	0.09	0.116	0.316	0.016	0.009	0.094	0.017	0.05	0.196	0.292
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	12 ##	2.5	26.458	260.	2.5	5424.475	73.651	2.5	2.5	11.	185.9
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	12	9.1	13.35	69.5	1.3	325.299	18.036	2.41	5.6	11.725	52.97

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1993 - Station MANA0024

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	21	17.	17.157	29.1	1.4	84.048	9.168	2.06	10.95	26.15	27.1
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	21	140.	158.095	253.	96.	1934.09	43.978	109.	123.5	180.	235.8
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	21	7.4	8.262	13.2	3.9	7.284	2.699	4.8	6.75	10.6	12.94
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	21	7.86	7.899	8.84	6.84	0.328	0.573	6.922	7.48	8.395	8.694
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	21	7.86	7.549	8.84	6.84	0.456	0.675	6.922	7.48	8.395	8.694
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	21	0.014	0.028	0.145	0.001	0.002	0.041	0.002	0.004	0.033	0.127
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	21	5.	25.286	258.	0.	3503.214	59.188	1.	3.	10.5	91.
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	21	5.1	11.476	68.	1.6	336.162	18.335	2.2	2.95	9.6	53.7

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

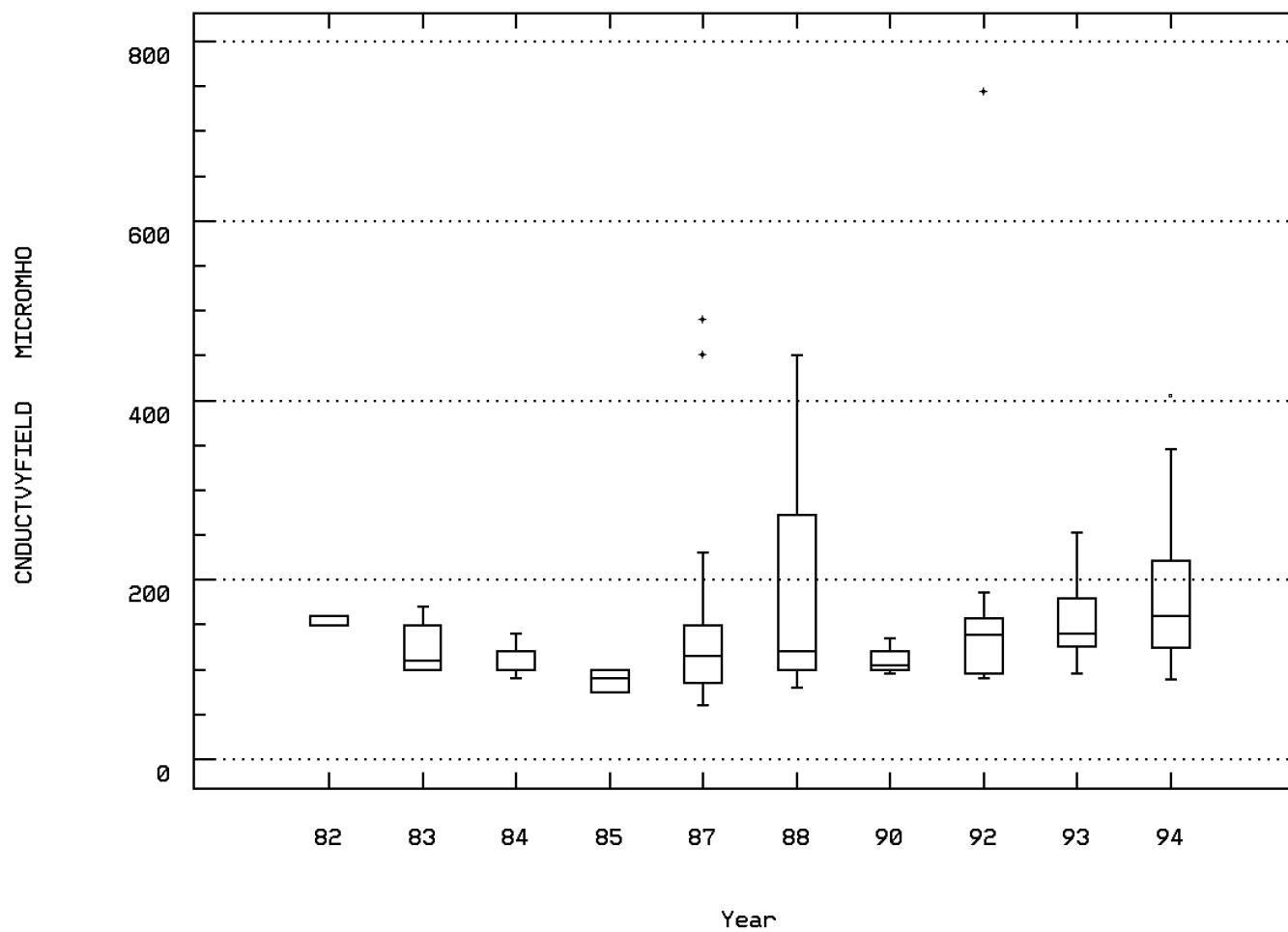
### Annual Analysis for 1994 - Station MANA0024

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	19	16.	15.063	27.	2.	64.457	8.029	3.	7.	22.8	25.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	19	160.	183.947	404.	89.	6978.497	83.537	97.	124.	222.	346.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	19	9.	9.189	13.2	5.	5.703	2.388	6.4	7.	10.2	13.
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	19	7.	6.989	7.6	6.1	0.178	0.421	6.3	6.7	7.4	7.5
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	19	7.	6.778	7.6	6.1	0.225	0.474	6.3	6.7	7.4	7.5
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	19	0.1	0.167	0.794	0.025	0.039	0.197	0.032	0.04	0.2	0.501
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	19	2.	26.316	320.	0.	5412.561	73.57	0.	1.	15.	82.
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	19	3.4	11.763	77.9	0.7	352.701	18.78	1.7	2.4	13.2	38.2

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0024 Parameter Code: 00094

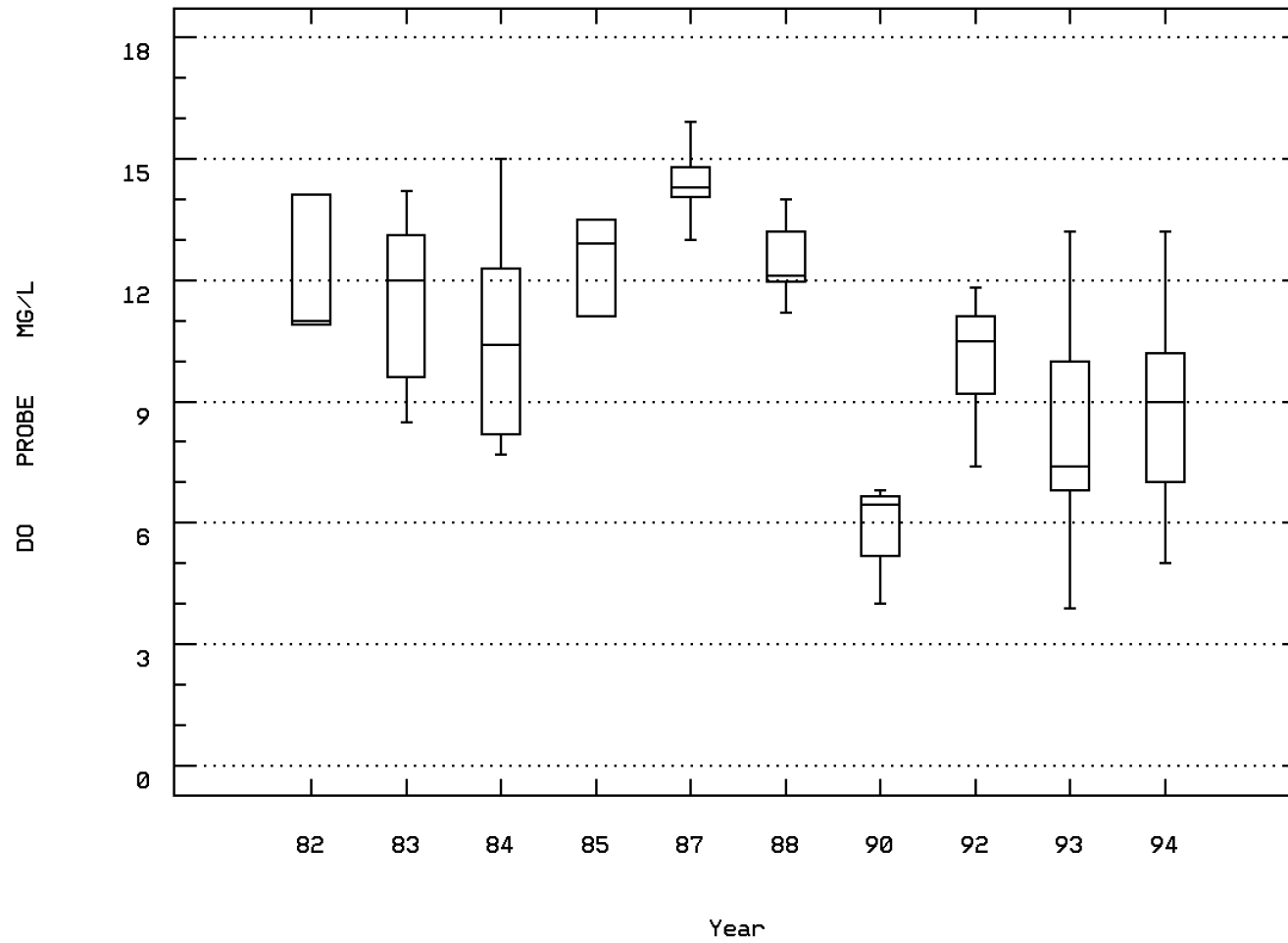
SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @



BULL RUN SUDLEY SPRINGS

Station: MANA0024 Parameter Code: 00299

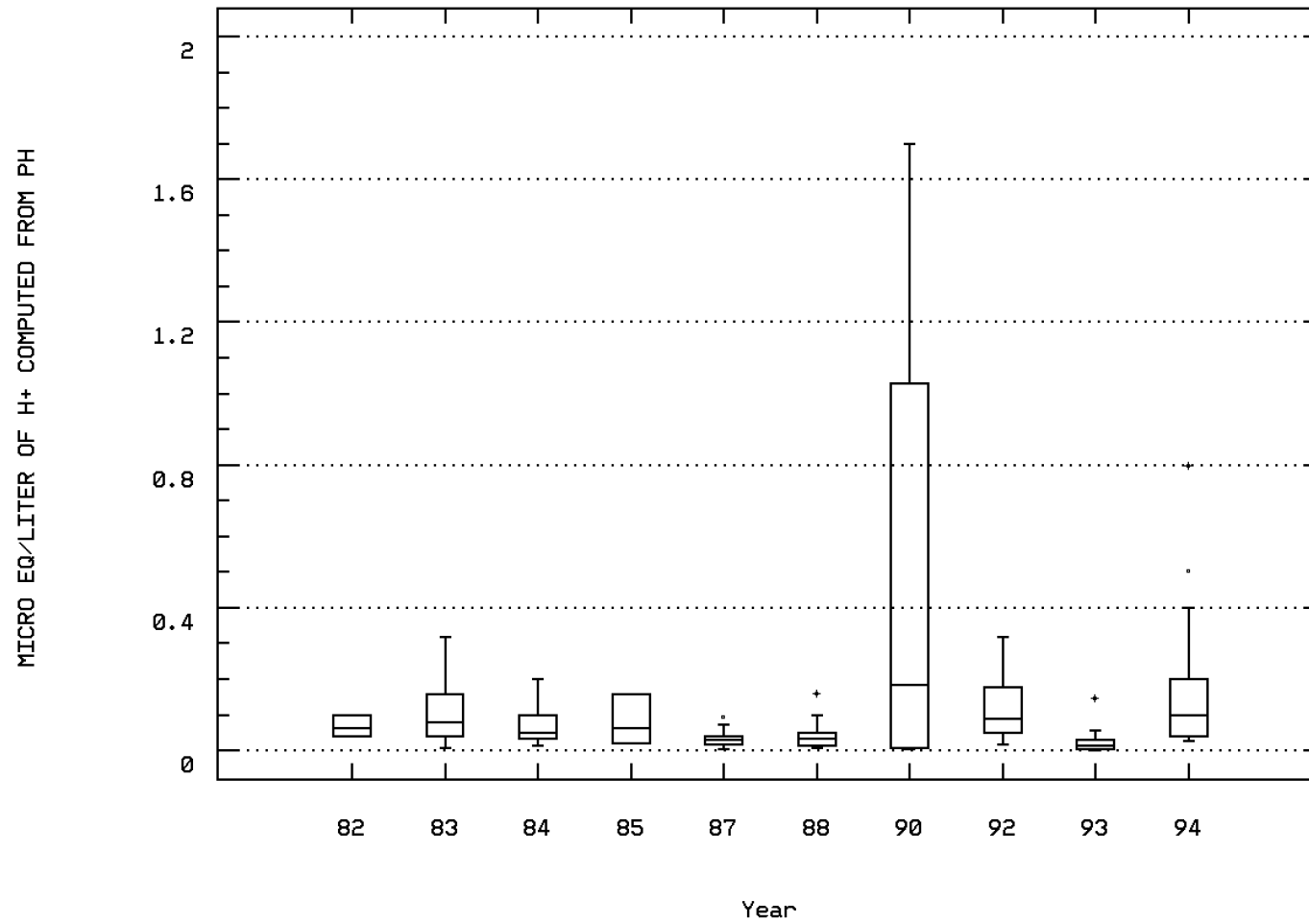
OXYGEN ,DISSOLVED, ANALYSIS BY PROBE



BULL RUN SUDLEY SPRINGS

Station: MANA0024 Parameter Code: 00406

MICRO EQ/LITER OF H+ COMPUTED FROM PH

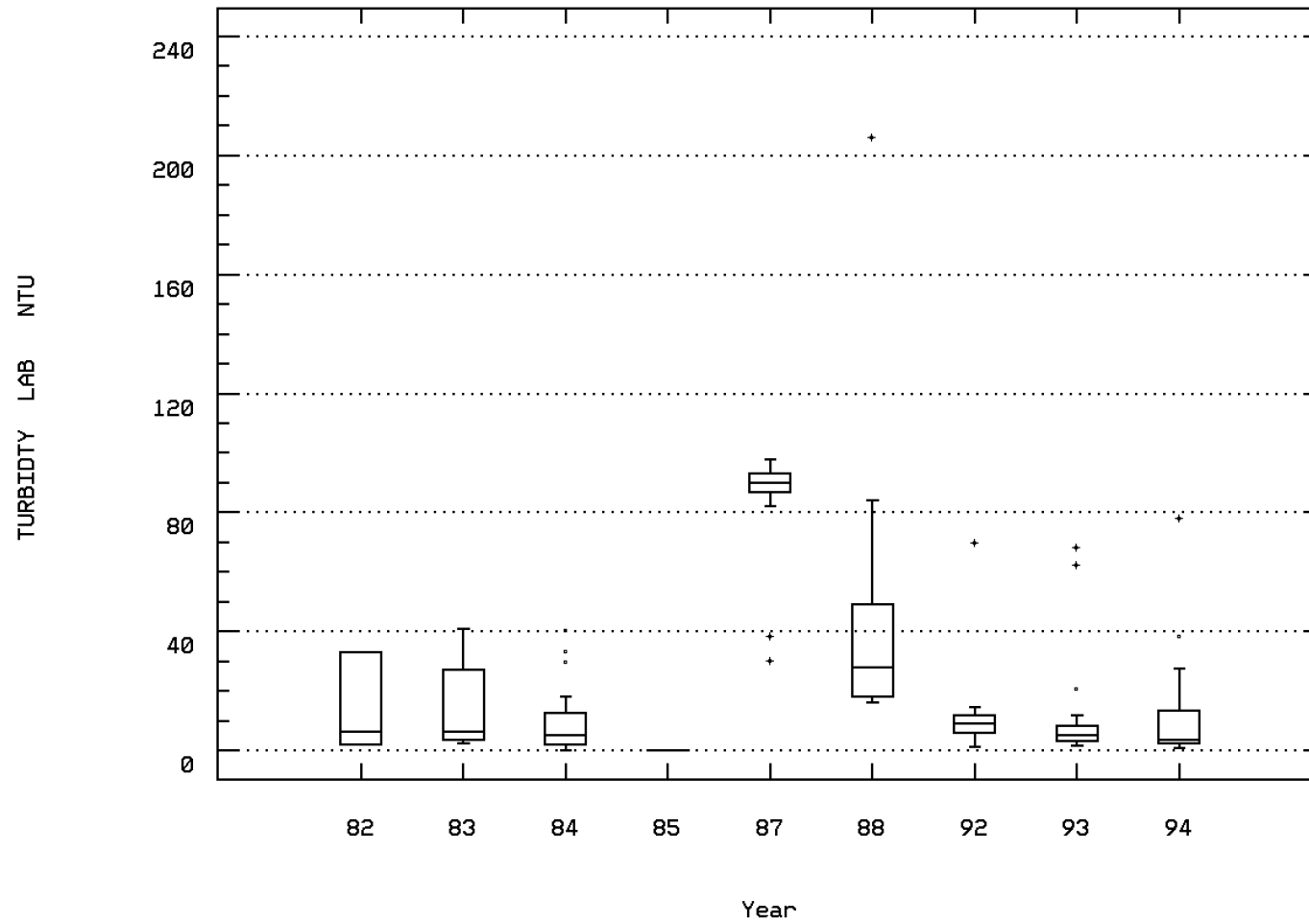


BULL RUN SUDLEY SPRINGS



Station: MANA0024 Parameter Code: 82079

TURBIDITY,LAB NEPHELOMETRIC TURBIDITY U



BULL RUN SUDLEY SPRINGS

### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0024

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	41	7.5	6.883	19.	-3.	29.59	5.44	2.	3.4	10.7	14.14
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	42	120.	128.5	253.	70.	1577.134	39.713	89.3	99.25	150.	186.8
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	41	12.	11.276	15.8	4.	7.969	2.823	6.84	9.5	13.3	14.68
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	42	7.065	7.173	8.7	5.77	0.333	0.577	6.539	6.8	7.4	8.119
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	42	7.064	6.841	8.7	5.77	0.446	0.668	6.539	6.8	7.4	8.119
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	42	0.086	0.144	1.698	0.002	0.071	0.266	0.008	0.04	0.158	0.292
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	36	2.75	15.893	320.	0.	2929.009	54.12	0.035	0.525	7.	25.
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	15	4.	31.733	210.	0.	3290.352	57.362	0.	0.	50.	141.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	15	0.602	0.797	2.322	0.	0.759	0.871	0.	0.	1.699	2.116
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			6.271								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	37	5.3	13.486	92.	0.2	425.671	20.632	0.64	2.35	12.85	38.56

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0024

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	61	17.	16.921	29.	1.4	47.908	6.922	6.6	11.5	22.7	26.36
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	61	120.	139.377	744.	60.	9329.072	96.587	90.	100.	137.	183.2
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	60	11.4	10.965	15.9	3.9	8.779	2.963	7.22	8.725	13.8	14.58
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	61	7.45	7.454	8.7	6.1	0.21	0.458	6.81	7.2	7.74	7.992
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	61	7.45	7.197	8.7	6.1	0.278	0.527	6.81	7.2	7.74	7.992
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	61	0.035	0.064	0.794	0.002	0.012	0.11	0.01	0.018	0.063	0.155
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	39	3.	20.781	260.	0.	3398.443	58.296	0.05	2.	8.	44.
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	15	33.	57.6	200.	0.	4874.4	69.817	0.	0.	73.	188.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	15	1.519	1.172	2.301	0.	0.883	0.94	0.	0.	1.863	2.274
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			14.853								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	61	11.8	33.234	98.	0.1	1338.478	36.585	2.28	5.05	75.75	92.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0024

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	32	23.75	23.141	30.	14.	16.639	4.079	17.	20.125	26.	28.53
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	32	165.	195.656	490.	65.	11909.007	109.128	93.	120.	225.25	423.
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	32	9.35	10.016	14.8	6.1	8.211	2.865	6.73	7.175	12.15	14.17
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	32	7.54	7.533	8.84	6.4	0.32	0.566	6.812	7.155	7.9	8.397
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	32	7.538	7.224	8.84	6.4	0.419	0.647	6.812	7.155	7.9	8.397
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	32	0.029	0.06	0.398	0.001	0.006	0.08	0.004	0.013	0.07	0.154
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	18	5.	10.525	87.	0.	407.012	20.175	0.045	1.75	9.75	30.3
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	9	20.	28.	74.	7.	490.75	22.153	7.	11.	45.	74.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	9	1.301	1.331	1.869	0.845	0.113	0.337	0.845	1.041	1.653	1.869
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			21.446								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	32	18.	35.441	206.	0.1	2151.593	46.385	1.66	2.4	76.5	92.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

## Station Inventory for Station: MANA0025

NPS Station ID: MANA0025  
Location: ROUTE 234 (FAIRFAX CO)  
Station Type: /TYPA/AMBNT/STREAM  
RMI-Indexes:

LAT/LON: 38.842227/ -77.538892

Agency: 21VASWCB  
FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
STORET Station ID(s): 1ALII000.14  
Within Park Boundary: No

Date Created: 04/10/93

HUC: 02070010  
Major Basin: 02-NORTH ATLANTIC  
Minor Basin: 1-POTOMAC-SHENANDOAH  
RF1 Index: 02070010  
RF3 Index: 02070010059601.50

Depth of Water: 0  
Elevation: 0

RF1 Mile Point: 0.000  
RF3 Mile Point: 4.50

Aquifer:  
Water Body Id:  
ECO Region:  
Distance from RF1: 0.00  
Distance from RF3: 0.21

On/Off RF1:  
On/Off RF3:

Description:  
VIRGINIA STATE WATER CONTROL BOARD      AMBIENT MONITORING      BASIN: 1A POTOMAC      REGION: 3 NORTHERN  
RIVER: LITTLE BULL RUN      SECTION: 07A      TOPO MAP #: 0027      TOPO MAP NAME: GAINESVILLE, VA

### Parameter Inventory for Station: MANA0025

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00310 BOD, 5 DAY, 20 DEG C MG/L	01/08/75-06/10/76	2	1.5	1.5	2.	1.	0.5	0.707	**	**	**	**
00340 COD, .25N K2CR2O7 MG/L	01/08/75-06/10/76	2	10.	10.	12.	8.	8.	2.828	**	**	**	**
00403 PH, LAB, STANDARD UNITS SU	06/10/76-06/10/76	1	7.5	7.5	7.5	7.5	0.	0.	**	**	**	**
00403 CONVERTED PH, LAB, STANDARD UNITS	06/10/76-06/10/76	1	7.5	7.5	7.5	7.5	0.	0.	**	**	**	**
00403 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	06/10/76-06/10/76	1	0.032	0.032	0.032	0.032	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	06/10/76-06/10/76	1	3.	3.	3.	3.	0.	0.	**	**	**	**
00500 RESIDUE, TOTAL (MG/L)	06/10/76-06/10/76	1	106.	106.	106.	106.	0.	0.	**	**	**	**
00505 RESIDUE, TOTAL VOLATILE (MG/L)	06/10/76-06/10/76	1	72.	72.	72.	72.	0.	0.	**	**	**	**
00510 RESIDUE, TOTAL FIXED (MG/L)	06/10/76-06/10/76	1	34.	34.	34.	34.	0.	0.	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/08/75-06/10/76	2	11.	11.	16.	6.	50.	7.071	**	**	**	**
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	01/08/75-06/10/76	2	2.	2.	2.	2.	0.	0.	**	**	**	**
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	01/08/75-06/10/76	2	4.	4.	4.	4.	0.	0.	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	01/08/75-06/10/76	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	01/08/75-06/10/76	2	0.52	0.52	0.9	0.14	0.289	0.537	**	**	**	**
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	01/08/75-06/10/76	2 ##	0.04	0.04	0.075	0.005	0.002	0.049	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	01/08/75-06/10/76	2	0.3	0.3	0.4	0.2	0.02	0.141	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	01/08/75-06/10/76	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	01/08/75-06/10/76	2 ##	0.03	0.03	0.05	0.01	0.001	0.028	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	01/08/75-06/10/76	2	7.	7.	9.	5.	8.	2.828	**	**	**	**
00940 CHLORIDE,TOTAL IN WATER MG/L	01/08/75-06/10/76	2	5.5	5.5	7.	4.	4.5	2.121	**	**	**	**
31616 FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	06/10/76-06/10/76	1	200.	200.	200.	200.	0.	0.	**	**	**	**
31616 LOG FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	06/10/76-06/10/76	1	2.301	2.301	2.301	2.301	0.	0.	**	**	**	**
31616 GM FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	GEOMETRIC MEAN =			200.								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0025

Parameter	Std. Type	Std. Value	Total		Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
			Obs				Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00403 PH, LAB	Other-Hi Lim.	9.	1		0	0.00				1	0	0.00						
	Other-Lo Lim.	6.5	1		0	0.00				1	0	0.00						
00615 NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	2		0	0.00	1	0	0.00	1	0	0.00						
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	2		0	0.00	1	0	0.00	1	0	0.00						
00940 CHLORIDE, TOTAL IN WATER	Fresh Acute	860.	2		0	0.00	1	0	0.00	1	0	0.00						
	Drinking Water	250.	2		0	0.00	1	0	0.00	1	0	0.00						
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	1		1	1.00				1	1	1.00						

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0026

NPS Station ID: MANA0026  
 Location: LITTLE BULL RUN NEAR BULL RUN, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin:  
 Minor Basin:  
 RF1 Index: 02070010  
 RF3 Index: 02070010005500.42  
 Description:

LAT/LON: 38.842227/ -77.539449

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 1.14

Agency: 112WRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): 01656750  
 Within Park Boundary: No

Date Created: / /

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.90  
 Distance from RF3: 0.02

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0026

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	05/15/69-08/28/79	2	18.5	18.5	23.	14.	40.5	6.364	**	**	**	**
00060 FLOW, STREAM, MEAN DAILY CFS	05/15/69-05/15/69	1	2.	2.	2.	2.	0.	0.	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	05/15/69-08/28/79	2	37.5	37.5	60.	15.	1012.5	31.82	**	**	**	**
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	05/15/69-08/28/79	2	125.5	125.5	144.	107.	684.5	26.163	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	08/28/79-08/28/79	1	8.5	8.5	8.5	8.5	0.	0.	**	**	**	**
00400 PH (STANDARD UNITS)	05/15/69-08/28/79	2	6.85	6.85	7.3	6.4	0.405	0.636	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	05/15/69-08/28/79	2	6.65	6.65	7.3	6.4	0.485	0.697	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	05/15/69-08/28/79	2	0.224	0.224	0.398	0.05	0.061	0.246	**	**	**	**
00405 CARBON DIOXIDE (MG/L AS CO2)	08/28/79-08/28/79	1	23.	23.	23.	23.	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CACO3)	05/15/69-08/28/79	2	39.5	39.5	49.	30.	180.5	13.435	**	**	**	**
00440 BICARBONATE ION (MG/L AS HCO3)	05/15/69-08/28/79	2	48.	48.	60.	36.	288.	16.971	**	**	**	**
00445 CARBONATE ION (MG/L AS CO3)	05/15/69-08/28/79	2	0.	0.	0.	0.	0.	0.	**	**	**	**
00613 NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	1	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00631 NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/28/79-08/28/79	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00650 PHOSPHATE, TOTAL (MG/L AS PO4)	05/15/69-05/15/69	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00660 PHOSPHATE, ORTHO (MG/L AS PO4)	08/28/79-08/28/79	1	0.06	0.06	0.06	0.06	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/28/79-08/28/79	1	0.02	0.02	0.02	0.02	0.	0.	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CACO3)	05/15/69-08/28/79	2	48.	48.	55.	41.	98.	9.899	**	**	**	**
00902 HARDNESS, NON-CARBONATE (MG/L AS CACO3)	05/15/69-08/28/79	2	9.	9.	12.	6.	18.	4.243	**	**	**	**
00915 CALCIUM, DISSOLVED (MG/L AS CA)	05/15/69-08/28/79	2	13.5	13.5	16.	11.	12.5	3.536	**	**	**	**
00925 MAGNESIUM, DISSOLVED (MG/L AS MG)	05/15/69-08/28/79	2	3.45	3.45	3.6	3.3	0.045	0.212	**	**	**	**
00930 SODIUM, DISSOLVED (MG/L AS NA)	05/15/69-08/28/79	2	4.8	4.8	5.7	3.9	1.62	1.273	**	**	**	**
00931 SODIUM ADSORPTION RATIO	05/15/69-08/28/79	2	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00932 SODIUM, PERCENT	05/15/69-08/28/79	2	17.	17.	18.	16.	2.	1.414	**	**	**	**
00933 SODIUM,PLUS POTASSIUM (MG/L)	08/28/79-08/28/79	1	5.9	5.9	5.9	5.9	0.	0.	**	**	**	**
00935 POTASSIUM, DISSOLVED (MG/L AS K)	05/15/69-08/28/79	2	1.8	1.8	2.	1.6	0.08	0.283	**	**	**	**
00940 CHLORIDE,TOTAL IN WATER MG/L	05/15/69-08/28/79	2	4.	4.	4.	4.	0.	0.	**	**	**	**
00945 SULFATE, TOTAL (MG/L AS SO4)	05/15/69-08/28/79	2	9.5	9.5	10.	9.	0.5	0.707	**	**	**	**
00950 FLUORIDE, DISSOLVED (MG/L AS F)	05/15/69-08/28/79	2	0.1	0.1	0.1	0.1	0.	0.	**	**	**	**
00955 SILICA, DISSOLVED (MG/L AS SI02)	05/15/69-08/28/79	2	9.	9.	11.	7.	8.	2.828	**	**	**	**
01046 IRON, DISSOLVED (UG/L AS FE)	05/15/69-08/28/79	2	160.	160.	250.	70.	16200.	127.279	**	**	**	**
70300 RESIDUE,TOTAL FILTRABLE (DRIED AT 180C),MG/L	05/15/69-08/28/79	2	85.	85.	89.	81.	32.	5.657	**	**	**	**
70301 SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	05/15/69-08/28/79	2	71.5	71.5	79.	64.	112.5	10.607	**	**	**	**
70302 SOLIDS, DISSOLVED-TONS PER DAY	05/15/69-05/15/69	1	0.55	0.55	0.55	0.55	0.	0.	**	**	**	**
70303 SOLIDS, DISSOLVED-TONS PER ACRE-FT	05/15/69-08/28/79	2	0.115	0.115	0.12	0.11	0.	0.007	**	**	**	**
71851 NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	05/15/69-08/28/79	2	0.95	0.95	1.3	0.6	0.245	0.495	**	**	**	**
71856 NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/28/79-08/28/79	1	0.03	0.03	0.03	0.03	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0026

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300	OXYGEN, DISSOLVED	Other-Lo Lim.	4.	1	0	0.00						1	0	0.00			
00400	PH	Other-Hi Lim.	9.	2	0	0.00			1	0	0.00	1	0	0.00			
		Other-Lo Lim.	6.5	2	1	0.50			1	0	0.00	1	1	1.00			
00613	NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	1	0	0.00						1	0	0.00			
00618	NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	1	0	0.00						1	0	0.00			
00631	NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	1	0	0.00						1	0	0.00			
00940	CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	2	0	0.00			1	0	0.00	1	0	0.00			
		Drinking Water	250.	2	0	0.00			1	0	0.00	1	0	0.00			
00945	SULFATE, TOTAL (AS SO4)	Drinking Water	250.	2	0	0.00			1	0	0.00	1	0	0.00			
00950	FLUORIDE, DISSOLVED AS F	Drinking Water	4.	2	0	0.00			1	0	0.00	1	0	0.00			
71851	NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	2	0	0.00			1	0	0.00	1	0	0.00			
71856	NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	1	0	0.00						1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0027

NPS Station ID: MANA0027  
 Location: FEATHERBED LANE  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC RIVER  
 RF1 Index: 02070010  
 RF3 Index: 02070010059601.50  
 Description:

LAT/LON: 38.839253/ -77.540893

Depth of Water: 0  
 Elevation: 184

RF1 Mile Point: 0.000  
 RF3 Mile Point: 4.50

Agency: 11NPSWRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): MANA\_11  
 Within Park Boundary: Yes

Date Created: 06/22/96

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.21

On/Off RF1:  
 On/Off RF3:

SITE IS LOCATED ALONG FEATHERBED LANE NEAR MR. CREW'S HOUSE NOT TOO FAR FROM THE SUDLEY SPRINGS CHURCH WHERE THE ROAD CROSSES THE DRAINAGE. SITE IS LOCATED ON THE GAINESVILLE VA 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE. IT IS THE RESPONSIBILITY OF MANASSAS NATIONAL BATTLEFIELD PARK - 6511 SUDLEY ROAD - MANASSAS VIRGINIA 22110 PH.(703)754-1861. FOR MORE INFORMATION CONTACT BARBARA MAULLER - RESOURCE MANAGEMENT - AT MANASSAS NATIONAL BATTLEFIELD PARK. DATA PROCESSED AND UPLOADED TO STORET BY RANDY SIDDENS AT NATIONAL PARK SERVICE WATER RESOURCE DIVISION IN FORT COLLINS COLORADO PH.(970)225-3556 FAX (970)225-9965.

### Parameter Inventory for Station: MANA0027

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-03/28/85	36	8.75	8.131	24.	-2.5	42.108	6.489	2.	5.	12.5	17.15
00094 SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-03/28/85	36	105.	117.083	250.	60.	1320.536	36.339	87.	100.	130.	180.
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-03/28/85	33	11.9	11.518	15.	5.	3.982	1.996	9.28	10.35	13.05	13.84
00406 PH, FIELD, STANDARD UNITS SU	12/02/82-03/28/85	36	7.15	7.136	8.	6.4	0.091	0.302	6.7	7.	7.3	7.53
00406 CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-03/28/85	36	7.147	7.037	8.	6.4	0.101	0.318	6.7	7.	7.3	7.53
00406 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-03/28/85	36	0.071	0.092	0.398	0.01	0.005	0.071	0.03	0.05	0.1	0.2
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-03/28/85	40	2.	4.035	45.	0.05	65.198	8.075	0.05	0.063	3.75	8.8
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-06/14/83	15	0.	18.8	240.	0.	3784.457	61.518	0.	0.	10.	109.2
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-06/14/83	15	0.	0.382	2.38	0.	0.52	0.721	0.	0.	1.	1.758
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			2.407								
82079 TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-03/28/85	35	6.4	16.066	130.	0.2	718.823	26.811	1.28	3.1	17.	34.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0027

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	33	0	0.00	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00406 PH, FIELD	Other-Hi Lim.	9.	36	0	0.00	19	0	0.00	13	0	0.00	1	0	0.00			
	Other-Lo Lim.	6.5	36	1	0.03	20	1	0.05	15	0	0.00	1	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	15	1	0.07	8	1	0.13	7	0	0.00						
82079 TURBIDITY, LAB	Other-Hi Lim.	50.	35	2	0.06	19	1	0.05	15	1	0.07	1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0028

NPS Station ID: MANA0028  
 Location: YOUNGS BRANCH NEW YORK AVENUE  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC RIVER  
 RF1 Index: 02070010  
 RF3 Index: 02070010059601.50  
 Description:

LAT/LON: 38.808476/ -77.543337

Depth of Water: 0  
 Elevation: 205

RF1 Mile Point: 0.000  
 RF3 Mile Point: 4.50

Agency: 11NPSWRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): MANA\_04  
 Within Park Boundary: Yes

Date Created: 06/22/96

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.21

On/Off RF1:  
 On/Off RF3:

MIDDLE YOUNGS BRANCH NEAR NEW YORK MONUMENT. SITE IS LOCATED UPSTREAM FROM WHERE BRIDAL TRAIL AND FOOT PATH CROSS STREAM. SITE IS LOCATED ON THE GAINESVILLE VA 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE. IT IS THE RESPONSIBILITY OF MANASSAS NATIONAL BATTLEFIELD PARK - 6511 SUDLEY ROAD - MANASSAS VIRGINIA 22110 PH.(703)754-1861. FOR MORE INFORMATION CONTACT BARBARA MAULLER - RESOURCE MANAGEMENT - AT MANASSAS NATIONAL BATTLEFIELD PARK. DATA PROCESSED AND UPLOADED TO STORET BY RANDY SIDDENS AT NATIONAL PARK SERVICE WATER RESOURCE DIVISION IN FORT COLLINS COLORADO PH.(970)225-3556 FAX (970)225-9965.

## Parameter Inventory for Station: MANA0028

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	137	16.	14.804	29.	-2.5	69.537	8.339	4.	8.85	22.	25.52
00020 TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	11	21.	20.227	27.5	10.	32.668	5.716	10.6	15.	26.	27.2
00045 PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	20	0.	0.158	1.62	0.	0.14	0.375	0.	0.	0.178	0.56
00061 FLOW, STREAM, INSTANTANEOUS CFS	05/02/87-11/26/90	30	0.15	0.913	11.	0.	5.788	2.406	0.	0.05	0.5	1.9
00064 DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	25	0.3	0.692	2.4	0.1	0.627	0.792	0.1	0.15	1.1	2.14
00094 SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	136	250.	313.426	1660.	65.	48393.402	219.985	125.7	180.	357.5	619.9
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	135	11.2	10.873	16.3	3.4	8.357	2.891	7.32	8.8	13.2	14.34
00406 PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	137	7.4	7.371	8.5	3.8	0.327	0.572	6.7	7.1	7.695	8.042
00406 CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	137	7.4	5.91	8.5	3.8	2.478	1.574	6.7	7.1	7.695	8.042
00406 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	137	0.04	1.231	158.489	0.003	183.19	13.535	0.009	0.02	0.079	0.2
00480 SALINITY - PARTS PER THOUSAND	04/04/87-11/26/90	37	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	95	2.5	7.861	120.	0.	281.99	16.793	0.05	0.9	6.	17.4
00630 NITRITE PLUS NITRATE, TOTAL I DET. (MG/L AS N)	08/08/93-10/27/94	5	0.17	0.428	0.96	0.05	0.182	0.427	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	2	0.645	0.645	0.7	0.59	0.006	0.078	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	41	27.	51.683	214.	0.	4236.022	65.085	0.	0.	81.	168.
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	41	1.431	1.126	2.33	0.	0.806	0.898	0.	0.	1.908	2.225
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			13.356								
82079 TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	131	9.2	27.375	231.	0.2	1379.745	37.145	1.2	3.	40.	92.
85663 FLOW, RATE FT/SEC	01/23/92-11/13/94	52	0.765	0.947	3.3	0.	0.549	0.741	0.123	0.4	1.4	2.059

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot



### EPA Water Quality Criteria Analysis for Station: MANA0028

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE					Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00406	PH, FIELD																
	Other-Lo Lim.	4.	135	3	0.02	41	1	0.02	62	1	0.02	32	1	0.03			
	Other-Hi Lim.	9.	137	0	0.00	42	0	0.00	63	0	0.00	32	0	0.00			
	Other-Lo Lim.	6.5	137	6	0.04	42	2	0.05	63	2	0.03	32	2	0.06			
00630	NITRITE PLUS NITRATE, TOTAL 1 DET.																
	Drinking Water	10.	5	0	0.00	1	0	0.00	1	0	0.00	3	0	0.00			
31616	FECAL COLIFORM, MEMBRANE FILTER, BROTH																
	Other-Hi Lim.	200.	41	2	0.05	15	0	0.00	17	1	0.06	9	1	0.11			
82079	TURBIDITY, LAB																
	Other-Hi Lim.	50.	131	30	0.23	37	1	0.03	62	20	0.32	32	9	0.28			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### Annual Analysis for 1982 - Station MANA0028

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	3	10.	6.833	10.	0.5	30.083	5.485	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	3	290.	273.333	340.	190.	5833.333	76.376	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	3	11.	11.9	13.9	10.8	3.01	1.735	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	3	7.2	7.233	7.5	7.	0.063	0.252	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	3	7.2	7.188	7.5	7.	0.066	0.258	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	3	0.063	0.065	0.1	0.032	0.001	0.034	**	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	3	4.	3.567	6.	0.7	7.163	2.676	**	**	**	**
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	3	5.2	13.1	32.	2.1	270.31	16.441	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1983 - Station MANA0028

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	13	6.	8.962	20.	0.5	47.853	6.918	0.9	3.25	16.5	19.8
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	13	200.	206.923	370.	100.	5456.41	73.868	112.	145.	260.	326.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	13	12.	11.4	13.9	9.	3.102	1.761	9.04	9.3	12.95	13.7
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	13	7.2	7.146	7.7	6.4	0.168	0.41	6.48	6.8	7.45	7.7
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	13	7.2	6.963	7.7	6.4	0.204	0.452	6.48	6.8	7.45	7.7
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	13	0.063	0.109	0.398	0.02	0.013	0.112	0.02	0.036	0.163	0.339
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	13	1.	2.4	6.	0.05	6.638	2.576	0.05	0.05	5.5	6.
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	13	13.	20.292	78.	1.7	497.142	22.297	2.06	4.2	37.5	62.8

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1984 - Station MANA0028

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	25	12.5	11.98	26.	-2.5	78.239	8.845	3.8	7.75	19.75	23.9
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	25	240.	273.52	750.	100.	16354.343	127.884	171.	190.	345.	398.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	24	10.15	10.458	15.	7.4	5.706	2.389	7.75	8.325	12.275	14.3
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	25	7.2	7.184	7.6	6.6	0.072	0.269	6.7	7.1	7.4	7.5
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	25	7.2	7.095	7.6	6.6	0.08	0.284	6.7	7.1	7.4	7.5
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	25	0.063	0.08	0.251	0.025	0.004	0.06	0.032	0.04	0.079	0.2
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	24	0.55	3.785	64.	0.05	168.152	12.967	0.05	0.05	2.	6.
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	25	3.5	11.164	110.	0.6	506.862	22.514	0.66	1.2	10.6	32.6

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1985 - Station MANA0028

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	3	6.	8.933	16.	4.8	37.813	6.149	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	3	130.	138.333	190.	95.	2308.333	48.045	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	3	12.5	11.867	12.6	10.5	1.403	1.185	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	3	7.4	7.333	7.6	7.	0.093	0.306	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	3	7.4	7.26	7.6	7.	0.101	0.318	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	3	0.04	0.055	0.1	0.025	0.002	0.04	**	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	3	4.	3.667	5.	2.	2.333	1.528	**	**	**	**
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	3	0.3	0.4	0.7	0.2	0.07	0.265	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1987 - Station MANA0028

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	25	21.	19.74	29.	5.	53.815	7.336	8.2	13.	25.5	28.2
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	24	260.	232.708	370.	65.	9228.216	96.064	95.	151.25	300.	357.5
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	24	14.3	14.454	16.3	13.2	0.576	0.759	13.4	13.925	15.075	15.5
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	25	7.52	7.584	8.4	6.93	0.108	0.329	7.26	7.365	7.76	8.144
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	25	7.52	7.482	8.4	6.93	0.119	0.345	7.26	7.365	7.76	8.144
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	25	0.03	0.033	0.117	0.004	0.001	0.023	0.007	0.018	0.043	0.055
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	23	92.	86.087	98.	50.	166.356	12.898	59.2	82.	94.	96.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1988 - Station MANA0028

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	12	21.5	20.333	26.	10.	29.697	5.449	10.3	17.5	25.	25.7
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	12	235.	258.	490.	75.	13068.909	114.319	97.8	172.5	347.5	451.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	12	12.1	12.183	13.4	11.3	0.458	0.677	11.33	11.675	12.475	13.4
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	12	7.75	7.492	8.5	3.8	1.504	1.227	4.82	7.425	8.125	8.47
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	12	7.747	4.879	8.5	3.8	8.954	2.992	4.82	7.425	8.125	8.47
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	12	0.018	13.227	158.489	0.003	2092.677	45.746	0.003	0.008	0.038	110.961
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	12	28.	47.583	231.	16.	3535.174	59.457	16.	16.	50.	177.9

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1990 - Station MANA0028

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	4	12.	13.5	20.	10.	20.333	4.509	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	4	300.	319.75	420.	259.	4840.25	69.572	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	4	5.75	5.45	6.3	4.	1.043	1.021	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	4	7.95	7.69	8.37	6.49	0.687	0.829	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	4	7.936	7.057	8.37	6.49	1.222	1.105	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	4	0.012	0.088	0.324	0.004	0.025	0.157	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1992 - Station MANA0028

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	12	12.25	12.167	22.	1.	61.282	7.828	1.3	5.15	20.375	22.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	12	155.5	163.5	249.	104.	2267.364	47.617	109.4	124.5	205.75	244.5
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	12	11.	10.892	13.1	8.8	1.317	1.148	9.04	10.125	11.4	12.83
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	12	7.375	7.543	8.5	6.64	0.373	0.611	6.721	7.035	8.225	8.44
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	12	7.374	7.231	8.5	6.64	0.479	0.692	6.721	7.035	8.225	8.44
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	12	0.042	0.059	0.229	0.003	0.004	0.066	0.004	0.006	0.093	0.197
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	12 ##	2.5	4.917	12.	2.	12.492	3.534	2.15	2.5	8.25	11.4
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	12	3.95	6.408	15.5	1.3	30.686	5.54	1.42	1.8	13.15	15.2

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1993 - Station MANA0028

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	21	17.5	16.343	28.2	1.6	72.615	8.521	4.	9.95	24.2	27.6
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	21	431.	464.143	776.	182.	43137.729	207.696	208.2	262.	658.	727.6
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	21	8.	8.3	13.2	3.4	8.21	2.865	3.84	6.45	10.25	12.92
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	21	7.61	7.593	8.23	6.05	0.252	0.502	6.866	7.37	8.015	8.178
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	21	7.61	7.142	8.23	6.05	0.466	0.683	6.866	7.37	8.015	8.178
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	21	0.025	0.072	0.891	0.006	0.036	0.191	0.007	0.01	0.043	0.145
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	21	9.	20.619	120.	1.	858.348	29.298	1.2	5.5	25.	70.6
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	21	7.3	12.067	56.	1.2	211.763	14.552	2.02	4.25	12.75	44.6

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

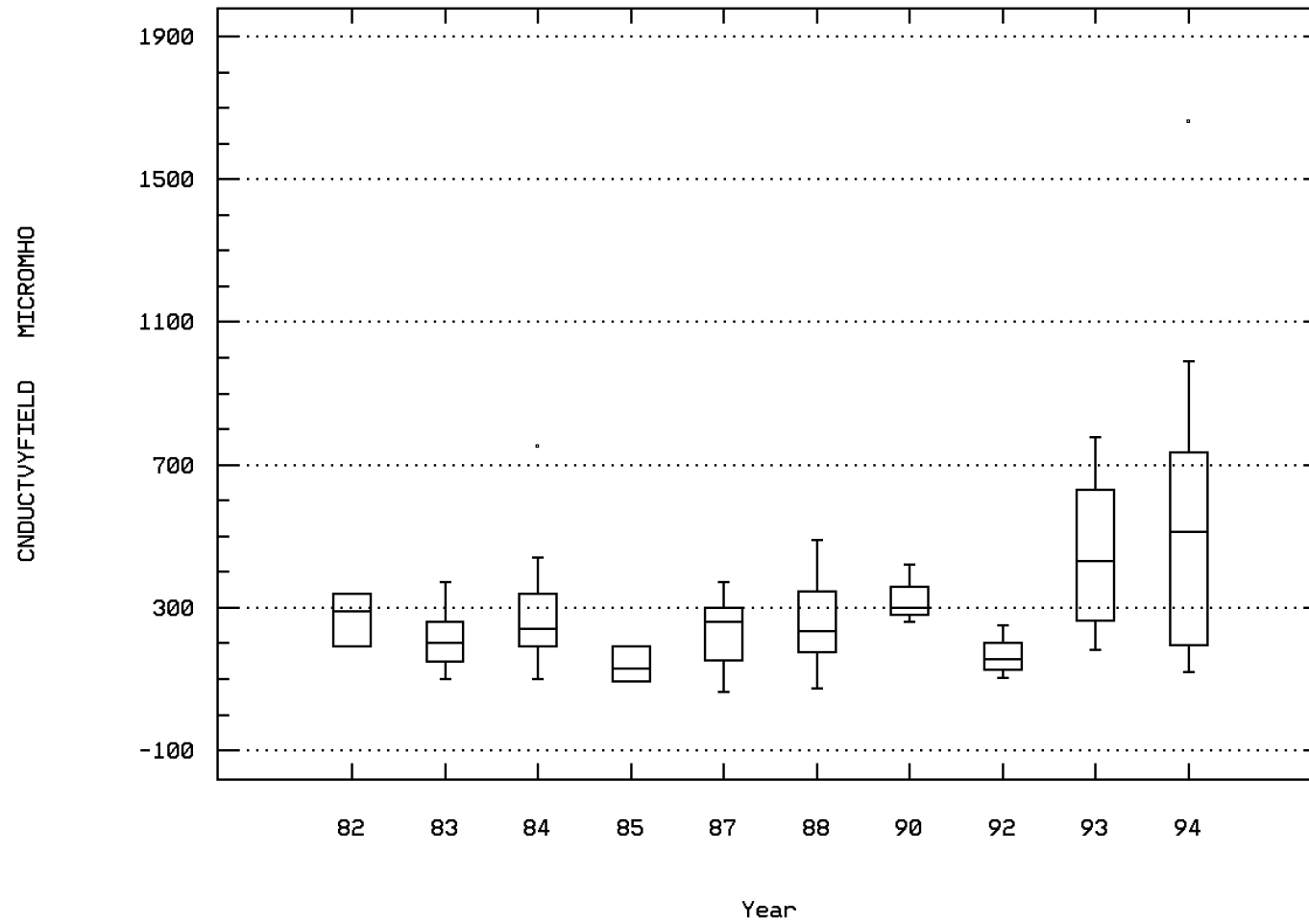
### Annual Analysis for 1994 - Station MANA0028

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	19	16.	14.958	26.	2.	56.117	7.491	4.	10.	21.7	24.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	19	511.	536.526	1660.	118.	146150.152	382.296	142.	196.	734.	991.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	19	9.4	9.342	13.4	4.8	5.497	2.345	5.3	7.6	11.2	12.8
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	19	7.	7.021	7.9	6.2	0.172	0.414	6.5	6.8	7.3	7.7
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	19	7.	6.848	7.9	6.2	0.203	0.451	6.5	6.8	7.3	7.7
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	19	0.1	0.142	0.631	0.013	0.02	0.143	0.02	0.05	0.158	0.316
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	19	4.	5.842	23.	0.	41.251	6.423	0.	2.	7.	18.
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	19	3.	6.389	22.3	0.6	45.124	6.717	0.8	1.6	10.4	21.3

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0028 Parameter Code: 00094

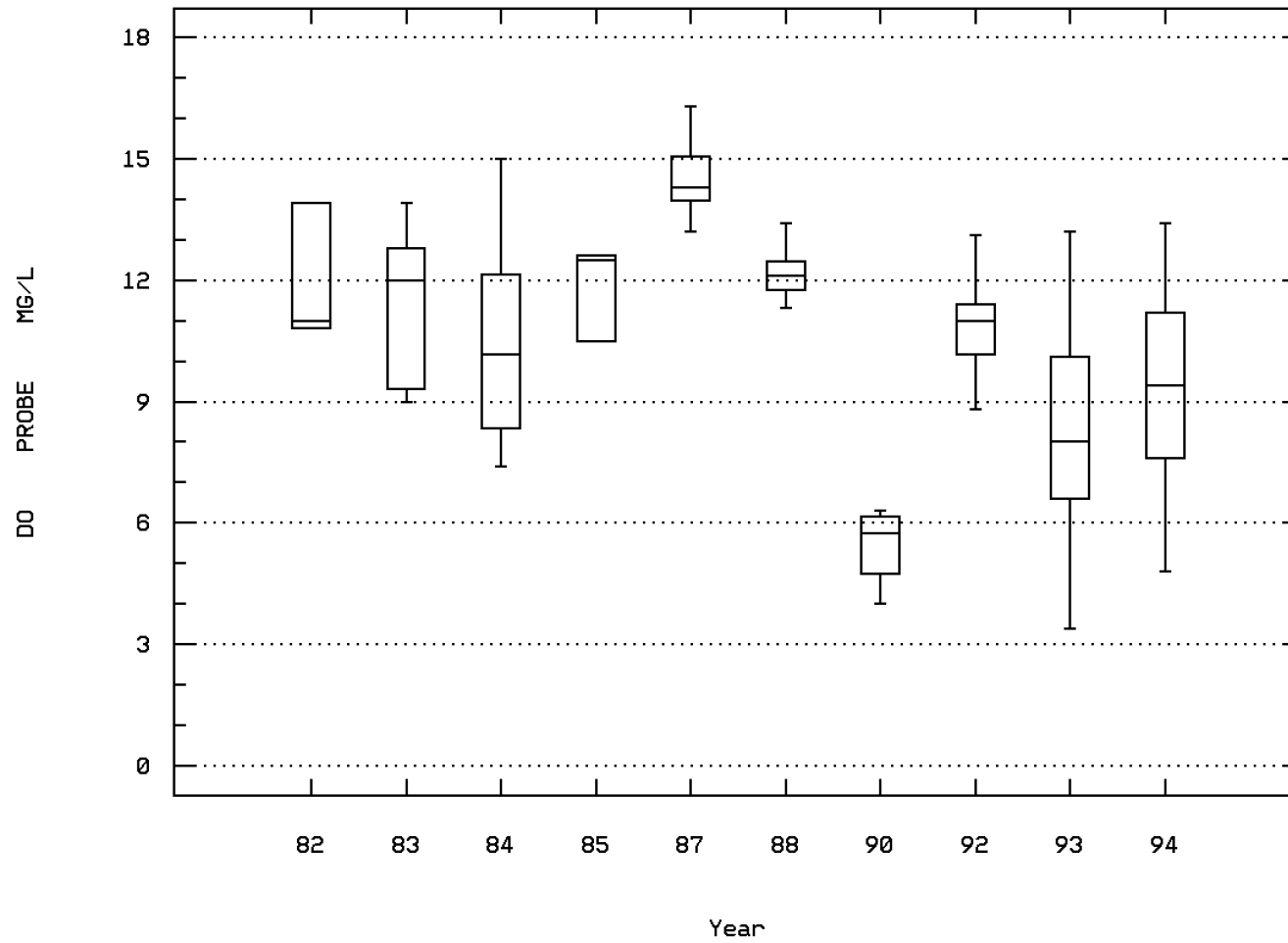
SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @



YOUNGS BRANCH NEW YORK AVENUE

Station: MANA0028 Parameter Code: 00299

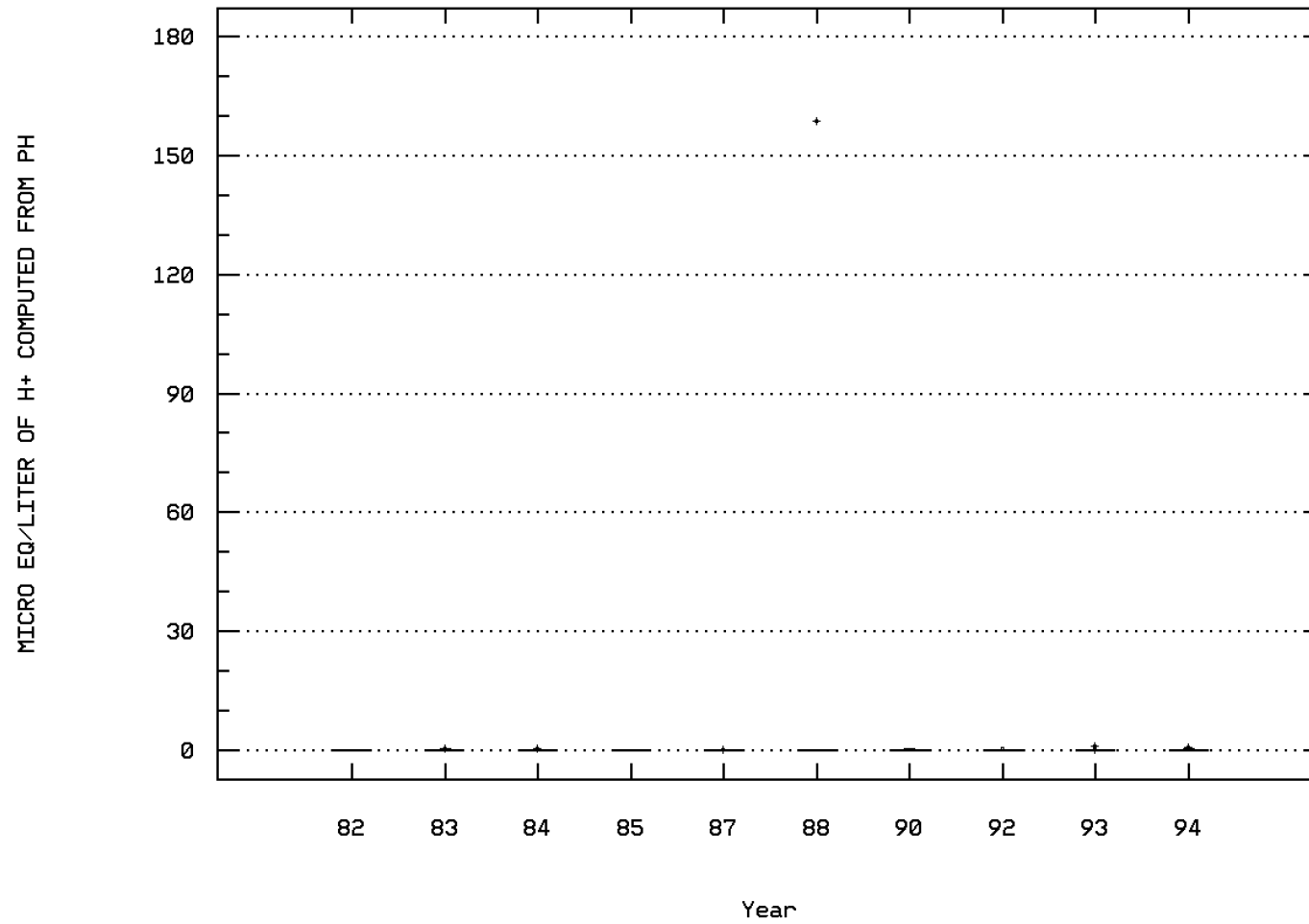
OXYGEN ,DISSOLVED, ANALYSIS BY PROBE



YOUNGS BRANCH NEW YORK AVENUE

Station: MANA0028 Parameter Code: 00406

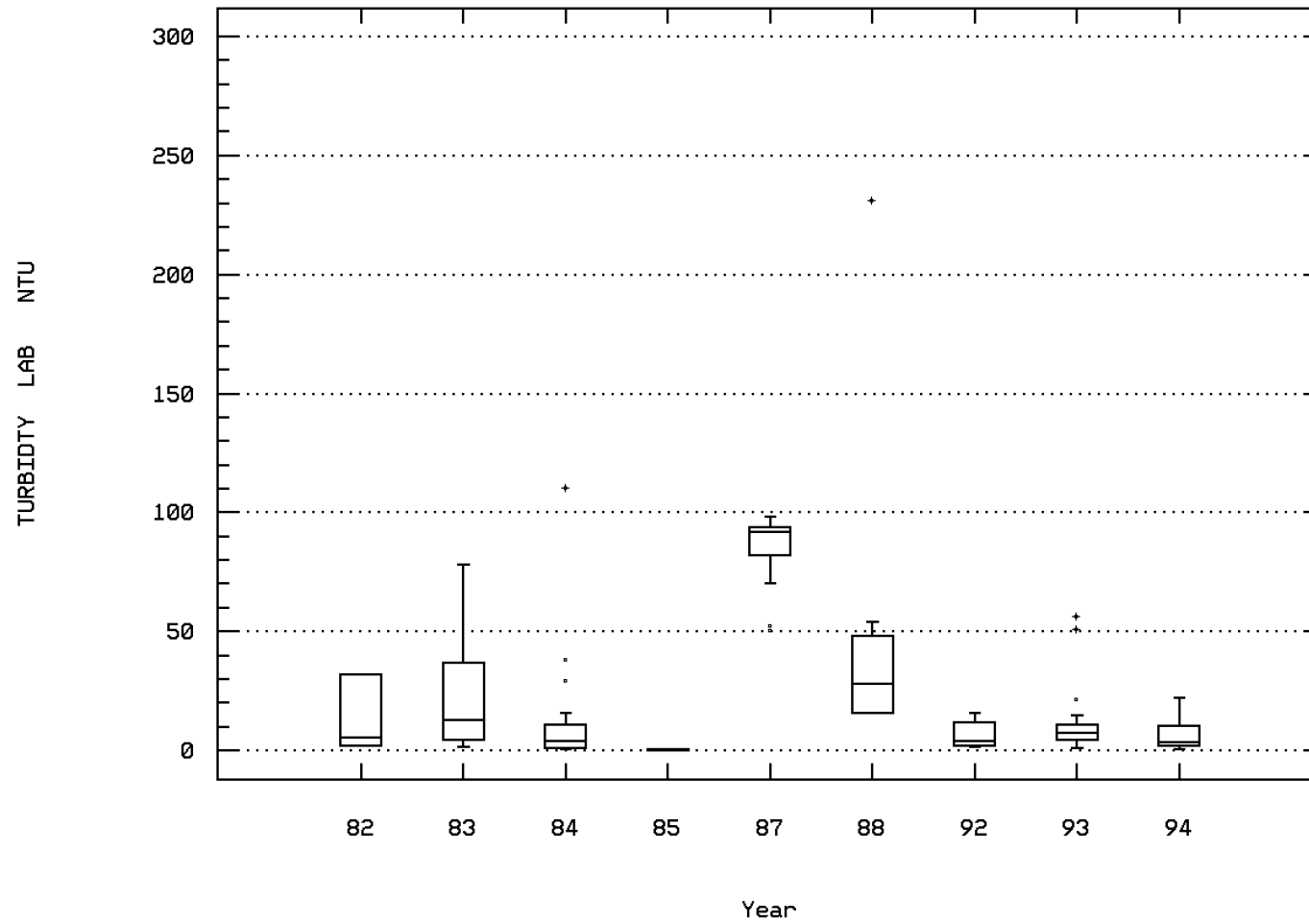
MICRO EQ/LITER OF H+ COMPUTED FROM PH



YOUNGS BRANCH NEW YORK AVENUE

Station: MANA0028 Parameter Code: 82079

TURBIDITY,LAB NEPHELOMETRIC TURBIDITY U



YOUNGS BRANCH NEW YORK AVENUE



### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0028

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	42	7.25	6.883	20.	-2.5	29.532	5.434	1.65	4.	11.
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	42	249.5	285.857	750.	95.	25484.76	159.639	133.	190.	303.25
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	41	11.4	11.132	15.2	4.	7.722	2.779	6.52	9.6	13.15
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	42	7.2	7.183	8.37	6.4	0.176	0.419	6.612	6.875	7.4
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	42	7.2	7.012	8.37	6.4	0.206	0.454	6.612	6.875	7.4
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	42	0.063	0.097	0.398	0.004	0.008	0.088	0.018	0.04	0.134
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	36	2.	3.96	18.	0.	20.605	4.539	0.05	0.75	6.
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	15	5.	23.533	160.	0.	1765.695	42.02	0.	0.	40.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	15	0.699	0.755	2.204	0.	0.659	0.812	0.	0.	1.602
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			5.691							1.926
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	37	5.4	11.4	92.	0.3	283.972	16.851	0.68	2.1	15.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0028

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	63	17.	16.113	29.	1.	49.541	7.039	6.	10.	22.
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	62	207.5	283.194	1660.	75.	64635.241	254.235	115.9	154.75	338.5
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	62	11.2	11.176	15.6	3.4	7.725	2.779	7.6	9.25	13.4
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	63	7.4	7.462	8.5	6.05	0.223	0.472	6.9	7.21	7.7
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	63	7.4	7.187	8.5	6.05	0.3	0.547	6.9	7.21	7.7
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	63	0.04	0.065	0.891	0.003	0.014	0.119	0.006	0.02	0.062
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	41	2.5	9.143	120.	0.	459.077	21.426	0.05	0.5	6.
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	17	38.	59.471	204.	0.	4514.015	67.186	0.	0.	101.5
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	17	1.58	1.21	2.31	0.	0.905	0.951	0.	0.	2.001
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			16.226							192.8
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	62	14.5	33.455	110.	0.2	1351.037	36.756	1.63	3.275	72.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0028

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	32	23.	22.625	28.5	14.	15.305	3.912	17.15	19.625	25.85
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	32	362.	408.188	776.	65.	37727.19	194.235	167.5	260.	605.5
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	32	9.2	9.956	16.3	3.6	9.818	3.133	5.6	7.575	12.15
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	32	7.595	7.438	8.5	3.8	0.69	0.831	6.63	7.225	7.9
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	32	7.595	5.3	8.5	3.8	5.409	2.326	6.63	7.225	7.9
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	32	0.025	5.013	158.489	0.003	784.364	28.007	0.009	0.013	0.06
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	18	6.	12.742	77.	0.05	375.223	19.371	0.275	2.	12.25
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	9	61.	83.889	214.	1.	6280.611	79.25	1.	14.5	164.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	9	1.785	1.583	2.33	0.	0.56	0.749	0.	1.148	2.215
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			38.318							214.
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	32	10.2	34.066	231.	0.8	2373.031	48.714	1.09	3.6	53.5

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

## Station Inventory for Station: MANA0029

NPS Station ID: MANA0029      LAT/LON: 38.817782/ -77.543337  
 Location: WELL NUMBER 50U1 AT WELL HEAD MANASSAS, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010      Depth of Water: 0  
 Major Basin:      Elevation: 0  
 Minor Basin:  
 RF1 Index: 02070010      RF1 Mile Point: 0.000  
 RF3 Index: 02070010021600.00      RF3 Mile Point: 0.31  
 Description:

Agency: 112WRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): 384904077323601  
 Within Park Boundary: Yes

Date Created: 11/18/75

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 2.90  
 Distance from RF3: 0.03

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0029

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/25/75-03/25/75	2	15.	15.	15.	15.	0.	0.	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	03/25/75-03/25/75	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	03/25/75-03/25/75	2	1030.	1030.	1030.	1030.	0.	0.	**	**	**	**
00400 PH (STANDARD UNITS)	03/25/75-03/25/75	2	7.4	7.4	7.6	7.2	0.08	0.283	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	03/25/75-03/25/75	2	7.355	7.355	7.6	7.2	0.084	0.29	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/25/75-03/25/75	2	0.044	0.044	0.063	0.025	0.001	0.027	**	**	**	**
00405 CARBON DIOXIDE (MG/L AS CO2)	03/25/75-03/25/75	1	7.6	7.6	7.6	7.6	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	03/25/75-03/25/75	1	155.	155.	155.	155.	0.	0.	**	**	**	**
00440 BICARBONATE ION (MG/L AS HCO3)	03/25/75-03/25/75	1	189.	189.	189.	189.	0.	0.	**	**	**	**
00445 CARBONATE ION (MG/L AS CO3)	03/25/75-03/25/75	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00613 NITRITE NITROGEN, DISSOLVED (MG/L AS N)	03/25/75-03/25/75	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	03/25/75-03/25/75	1	0.11	0.11	0.11	0.11	0.	0.	**	**	**	**
00631 NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	03/25/75-03/25/75	1	0.1	0.1	0.1	0.1	0.	0.	**	**	**	**
00660 PHOSPHATE, ORTHO (MG/L AS PO4)	03/25/75-03/25/75	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	03/25/75-03/25/75	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	03/25/75-03/25/75	1	470.	470.	470.	470.	0.	0.	**	**	**	**
00902 HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	03/25/75-03/25/75	1	320.	320.	320.	320.	0.	0.	**	**	**	**
00915 CALCIUM, DISSOLVED (MG/L AS Ca)	03/25/75-03/25/75	1	150.	150.	150.	150.	0.	0.	**	**	**	**
00925 MAGNESIUM, DISSOLVED (MG/L AS MG)	03/25/75-03/25/75	1	24.	24.	24.	24.	0.	0.	**	**	**	**
00930 SODIUM, DISSOLVED (MG/L AS Na)	03/25/75-03/25/75	1	65.	65.	65.	65.	0.	0.	**	**	**	**
00931 SODIUM ADSORPTION RATIO	03/25/75-03/25/75	1	1.3	1.3	1.3	1.3	0.	0.	**	**	**	**
00932 SODIUM, PERCENT	03/25/75-03/25/75	1	23.	23.	23.	23.	0.	0.	**	**	**	**
00935 POTASSIUM, DISSOLVED (MG/L AS K)	03/25/75-03/25/75	1	2.4	2.4	2.4	2.4	0.	0.	**	**	**	**
00940 CHLORIDE, TOTAL IN WATER MG/L	03/25/75-03/25/75	1	15.	15.	15.	15.	0.	0.	**	**	**	**
00945 SULFATE, TOTAL (MG/L AS SO4)	03/25/75-03/25/75	1	400.	400.	400.	400.	0.	0.	**	**	**	**
00950 FLUORIDE, DISSOLVED (MG/L AS F)	03/25/75-03/25/75	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00955 SILICA, DISSOLVED (MG/L AS SiO2)	03/25/75-03/25/75	1	27.	27.	27.	27.	0.	0.	**	**	**	**
01000 ARSENIC, DISSOLVED (UG/L AS AS)	03/25/75-03/25/75	1	2.	2.	2.	2.	0.	0.	**	**	**	**
01025 CADMIUM, DISSOLVED (UG/L AS Cd)	03/25/75-03/25/75	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
01030 CHROMIUM, DISSOLVED (UG/L AS CR)	03/25/75-03/25/75	1 ##	1.	1.	1.	1.	0.	0.	**	**	**	**
01035 COBALT, DISSOLVED (UG/L AS CO)	03/25/75-03/25/75	1 ##	1.	1.	1.	1.	0.	0.	**	**	**	**
01040 COPPER, DISSOLVED (UG/L AS CU)	03/25/75-03/25/75	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
01046 IRON, DISSOLVED (UG/L AS FE)	03/25/75-03/25/75	1	30.	30.	30.	30.	0.	0.	**	**	**	**
01049 LEAD, DISSOLVED (UG/L AS Pb)	03/25/75-03/25/75	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
01065 NICKEL, DISSOLVED (UG/L AS NI)	03/25/75-03/25/75	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
01075 SILVER, DISSOLVED (UG/L AS AG)	03/25/75-03/25/75	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
01090 ZINC, DISSOLVED (UG/L AS ZN)	03/25/75-03/25/75	1	170.	170.	170.	170.	0.	0.	**	**	**	**
01106 ALUMINUM, DISSOLVED (UG/L AS AL)	03/25/75-03/25/75	1	6.	6.	6.	6.	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0029

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
70300 RESIDUE,TOTAL FILTRABLE (DRIED AT 180C),MG/L	03/25/75-03/25/75	1	864.	864.	864.	864.	0.	0.	**	**	**	**
70301 SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	03/25/75-03/25/75	1	777.	777.	777.	777.	0.	0.	**	**	**	**
70303 SOLIDS, DISSOLVED-TONS PER ACRE-FT	03/25/75-03/25/75	1	1.18	1.18	1.18	1.18	0.	0.	**	**	**	**
71851 NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	03/25/75-03/25/75	1	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
71856 NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	03/25/75-03/25/75	1	0.	0.	0.	0.	0.	0.	**	**	**	**
71890 MERCURY, DISSOLVED (UG/L AS HG)	03/25/75-03/25/75	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0029

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00400 PH	Other-Hi Lim.	9.	2	0	0.00				2	0	0.00						
	Other-Lo Lim.	6.5	2	0	0.00				2	0	0.00						
00613 NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	1	0	0.00				1	0	0.00						
00618 NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	1	0	0.00				1	0	0.00						
00631 NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	1	0	0.00				1	0	0.00						
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	1	0	0.00				1	0	0.00						
	Drinking Water	250.	1	0	0.00				1	0	0.00						
00945 SULFATE, TOTAL (AS SO4)	Drinking Water	250.	1	1	1.00				1	1	1.00						
00950 FLUORIDE, DISSOLVED AS F	Drinking Water	4.	1	0	0.00				1	0	0.00						
01000 ARSENIC, DISSOLVED	Fresh Acute	360.	1	0	0.00				1	0	0.00						
	Drinking Water	50.	1	0	0.00				1	0	0.00						
01025 CADMIUM, DISSOLVED	Fresh Acute	3.9	1	0	0.00				1	0	0.00						
	Drinking Water	5.	1	0	0.00				1	0	0.00						
01030 CHROMIUM, DISSOLVED	Drinking Water	100.	1	0	0.00				1	0	0.00						
01040 COPPER, DISSOLVED	Fresh Acute	18.	1	0	0.00				1	0	0.00						
	Drinking Water	1300.	1	0	0.00				1	0	0.00						
01049 LEAD, DISSOLVED	Fresh Acute	82.	1	0	0.00				1	0	0.00						
	Drinking Water	15.	1	0	0.00				1	0	0.00						
01065 NICKEL, DISSOLVED	Fresh Acute	1400.	1	0	0.00				1	0	0.00						
	Drinking Water	100.	1	0	0.00				1	0	0.00						
01075 SILVER, DISSOLVED	Fresh Acute	4.1	1	0	0.00				1	0	0.00						
	Drinking Water	100.	1	0	0.00				1	0	0.00						
01090 ZINC, DISSOLVED	Fresh Acute	120.	1	1	1.00				1	1	1.00						
	Drinking Water	5000.	1	0	0.00				1	0	0.00						
71851 NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	1	0	0.00				1	0	0.00						
71856 NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	1	0	0.00				1	0	0.00						
71890 MERCURY, DISSOLVED	Fresh Acute	2.4	1	0	0.00				1	0	0.00						
	Drinking Water	2.	1	0	0.00				1	0	0.00						

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0030

NPS Station ID: MANA0030      LAT/LON: 38.814143/ -77.544448

Location: DOGAN BRANCH WARRENTON TURNPIKE

Station Type: /TYPA/AMBNT/STREAM

RMI-Indexes:

RMI-Miles:

HUC: 02070010

Major Basin: NORTH ATLANTIC

Minor Basin: POTOMAC RIVER

RF1 Index: 02070010

RF3 Index: 02070010059601.50

Description:

DOGAN BRANCH JUST UPSTREAM FROM WHERE WARRENTON TURNPIKE CROSSES STREAM AND DOWNSTREAM FROM GROVETON CONFEDERATE CEMETERY. SITE IS LOCATED ON THE GAINESVILLE VA 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE. IT IS THE RESPONSIBILITY OF MANASSAS NATIONAL BATTLEFIELD PARK - 6511 SUDLEY ROAD - MANASSAS VIRGINIA 22110 PH.(703)754-1861. FOR MORE INFORMATION CONTACT BARBARA MAULLER - RESOURCE MANAGEMENT - AT MANASSAS NATIONAL BATTLEFIELD PARK. DATA PROCESSED AND UPLOADED TO STORET BY RANDY SIDDENS AT NATIONAL PARK SERVICE WATER RESOURCE DIVISION IN FORT COLLINS COLORADO PH.(970)225-3556 FAX (970)225-9965.

Agency: 11NPSWRD

FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM

STORET Station ID(s): MANA\_05

Within Park Boundary: Yes

Date Created: 06/22/96

Depth of Water: 0

Elevation: 218

RF1 Mile Point: 0.000

RF3 Mile Point: 4.50

Aquifer:

Water Body Id:

ECO Region:

Distance from RF1: 0.00

Distance from RF3: 0.21

On/Off RF1:

On/Off RF3:

## Parameter Inventory for Station: MANA0030

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	149	16.	14.592	29.	-3.	65.402	8.087	5.	8.5	22.	25.
00020 TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	11	20.	19.091	28.	9.	33.441	5.783	9.8	14.	21.5	27.9
00045 PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	20	0.	0.158	1.62	0.	0.14	0.375	0.	0.	0.178	0.56
00061 FLOW, STREAM, INSTANTANEOUS CFS	04/12/87-11/01/90	31	0.1	0.888	7.	0.	3.422	1.85	0.008	0.05	0.5	4.
00064 DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	25	1.3	1.272	2.4	0.3	0.249	0.499	0.58	0.85	1.55	1.98
00094 SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	148	235.	249.919	825.	70.	16471.381	128.341	109.	140.25	330.	410.8
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	145	10.7	10.412	16.3	2.6	10.271	3.205	5.66	8.2	12.8	14.44
00406 PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	149	7.3	7.274	8.62	6.	0.21	0.458	6.64	7.	7.6	7.8
00406 CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	149	7.3	7.033	8.62	6.	0.269	0.519	6.64	7.	7.6	7.8
00406 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	149	0.05	0.093	1.	0.002	0.017	0.129	0.016	0.025	0.1	0.229
00480 SALINITY - PARTS PER THOUSAND	04/04/87-11/01/90	36	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	109	2.5	6.385	65.	0.	118.258	10.875	0.05	0.9	7.	16.
00630 NITRITE PLUS NITRATE, TOTAL I DET. (MG/L AS N)	08/08/93-10/27/94	5 ##	0.05	0.432	1.01	0.05	0.274	0.523	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	2	0.5	0.5	0.64	0.36	0.039	0.198	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	54	0.	42.	760.	0.	12728.491	112.821	0.	0.	40.	100.
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	54	0.	0.742	2.881	0.	0.801	0.895	0.	0.	1.602	2.
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			5.524								
82079 TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	144	7.75	24.741	360.	0.2	1938.891	44.033	1.15	2.5	19.875	90.5
85663 FLOW, RATE FT/SEC	01/23/92-11/13/94	52	0.095	0.301	2.4	0.	0.281	0.53	0.	0.05	0.318	1.187

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0030

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	145	4	0.03	47	1	0.02	64	2	0.03	34	1	0.03			
00406 PH, FIELD	Other-Hi Lim.	9.	149	0	0.00	49	0	0.00	64	0	0.00	36	0	0.00			
	Other-Lo Lim.	6.5	149	7	0.05	49	3	0.06	64	1	0.02	36	3	0.08			
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	5	0	0.00	1	0	0.00	1	0	0.00	3	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	54	2	0.04	22	0	0.00	18	2	0.11	14	0	0.00			
82079 TURBIDITY, LAB	Other-Hi Lim.	50.	144	24	0.17	44	1	0.02	64	16	0.25	36	7	0.19			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### Annual Analysis for 1982 - Station MANA0030

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	3	10.	7.5	10.5	2.	22.75	4.77	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	3	250.	240.	320.	150.	7300.	85.44	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	3	10.7	11.467	13.2	10.5	2.263	1.504	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	3	7.3	7.267	7.5	7.	0.063	0.252	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	3	7.3	7.218	7.5	7.	0.067	0.259	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	3	0.05	0.061	0.1	0.032	0.001	0.035	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	3	1.	2.017	5.	0.05	6.901	2.627	**	**	**
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	3	1.6	8.067	21.	1.6	125.453	11.201	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1983 - Station MANA0030

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	26	3.5	10.658	23.	-3.	57.015	7.551	2.62	5.	18.625
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	26	200.	246.538	440.	100.	17063.538	130.627	100.	132.5	392.5
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	24	10.9	10.754	13.4	8.	3.004	1.733	8.4	8.95	12.25
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	26	7.1	7.165	7.8	6.1	0.178	0.421	6.57	6.9	7.45
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	26	7.1	6.948	7.8	6.1	0.227	0.476	6.57	6.9	7.45
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	26	0.079	0.113	0.794	0.016	0.024	0.156	0.016	0.036	0.126
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	26	1.	2.523	16.	0.05	14.026	3.745	0.05	0.088	3.25
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	26	4.75	6.669	19.	0.8	35.609	5.967	0.97	1.65	11.625

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1984 - Station MANA0030

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	25	11.5	11.76	24.5	-2.	71.815	8.474	3.8	7.75	18.25
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	25	210.	229.6	370.	120.	7070.667	84.087	126.	145.	307.5
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	24	9.85	10.413	14.8	6.6	5.685	2.384	7.95	8.325	12.575
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	25	7.2	7.132	7.7	6.4	0.089	0.298	6.72	6.9	7.3
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	25	7.2	7.025	7.7	6.4	0.101	0.317	6.72	6.9	7.3
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	25	0.063	0.094	0.398	0.02	0.007	0.081	0.029	0.05	0.126
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	25	1.	3.054	39.	0.05	60.761	7.795	0.05	0.05	2.
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	25	3.5	5.744	29.	0.3	50.819	7.129	0.48	0.85	7.1

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1985 - Station MANA0030

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	3	5.	7.3	12.8	4.1	22.89	4.784	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	3	100.	110.	130.	100.	300.	17.321	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	3	12.6	12.267	12.7	11.5	0.443	0.666	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	3	7.1	7.1	7.2	7.	0.01	0.1	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	3	7.1	7.092	7.2	7.	0.01	0.1	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	3	0.079	0.081	0.1	0.063	0.	0.018	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	3	4.	4.333	5.	4.	0.333	0.577	**	**	**
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	3	0.2	0.233	0.3	0.2	0.003	0.058	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1987 - Station MANA0030

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	24	21.	19.208	29.	6.	50.694	7.12	7.5	13.	24.75	27.5
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	23	240.	227.391	400.	75.	10506.522	102.501	91.	130.	320.	369.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	23	14.5	14.661	16.3	13.6	0.49	0.7	14.	14.1	15.5	15.6
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	24	7.49	7.456	8.04	6.9	0.109	0.33	7.015	7.118	7.7	7.875
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	24	7.489	7.34	8.04	6.9	0.123	0.35	7.015	7.117	7.7	7.875
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	24	0.032	0.046	0.126	0.009	0.001	0.034	0.013	0.02	0.077	0.097
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	23	91.	99.565	360.	33.	3400.893	58.317	76.4	86.	96.	96.6

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1988 - Station MANA0030

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	12	21.	20.167	26.	10.	29.061	5.391	10.3	17.5	24.75	25.7
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	12	225.	224.167	375.	75.	8512.879	92.265	85.5	150.	312.5	361.5
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	12	12.2	12.358	13.9	11.5	0.444	0.667	11.56	12.	12.7	13.69
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	12	7.3	7.336	7.9	6.96	0.081	0.285	6.978	7.125	7.438	7.87
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	12	7.3	7.263	7.9	6.96	0.087	0.295	6.978	7.125	7.437	7.87
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	12	0.05	0.055	0.11	0.013	0.001	0.03	0.014	0.037	0.075	0.105
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	12	24.	41.417	206.	16.	2832.083	53.217	16.	16.	41.25	160.4

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1990 - Station MANA0030

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	4	12.95	14.975	23.	11.	29.669	5.447	**	**	**	**
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	4	203.5	212.25	300.	142.	4350.917	65.961	**	**	**	**
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	4	5.3	5.1	5.5	4.3	0.293	0.542	**	**	**	**
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	4	7.465	7.567	7.99	7.35	0.086	0.293	**	**	**	**
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	4	7.459	7.507	7.99	7.35	0.091	0.302	**	**	**	**
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	4	0.035	0.031	0.045	0.01	0.	0.015	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1992 - Station MANA0030

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	12	13.5	13.575	25.	2.	52.569	7.25	2.9	8.275	19.	24.25
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	12	251.5	232.25	316.	132.	4206.205	64.855	132.6	166.	281.25	315.1
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	12	10.	10.258	13.7	7.6	3.539	1.881	7.87	8.525	11.55	13.46
00406p	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	12	7.405	7.479	8.6	6.54	0.444	0.667	6.561	6.848	8.05	8.51
00406p	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	12	7.395	7.096	8.6	6.54	0.605	0.778	6.561	6.847	8.05	8.51
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	12	0.04	0.08	0.288	0.003	0.01	0.1	0.003	0.009	0.151	0.276
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	12 ##	2.5	5.75	20.	1.	34.25	5.852	1.45	2.5	6.75	18.5
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	12	4.35	5.875	18.	1.1	27.26	5.221	1.19	2.	7.625	16.65

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1993 - Station MANA0030

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	21	17.5	16.39	28.8	0.6	68.3	8.264	5.16	9.3	24.1	26.6
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	21	308.	306.381	700.	70.	27763.948	166.625	101.4	170.5	423.	570.8
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	21	5.8	6.486	12.7	2.6	8.019	2.832	2.92	4.5	8.1	10.58
00406p	PH, FIELD, STANDARD UNITS SU	21	7.67	7.547	8.62	6.45	0.257	0.507	6.676	7.245	7.795	8.216
00406p	CONVERTED PH, FIELD, STANDARD UNITS	21	7.67	7.241	8.62	6.45	0.355	0.596	6.676	7.245	7.795	8.216
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	21	0.021	0.057	0.355	0.002	0.008	0.087	0.007	0.016	0.057	0.214
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	21	13.	18.048	65.	3.	323.748	17.993	3.2	6.	22.5	59.4
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	21	8.4	11.243	35.	2.1	78.742	8.874	3.92	5.4	13.25	31.1

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1994 - Station MANA0030

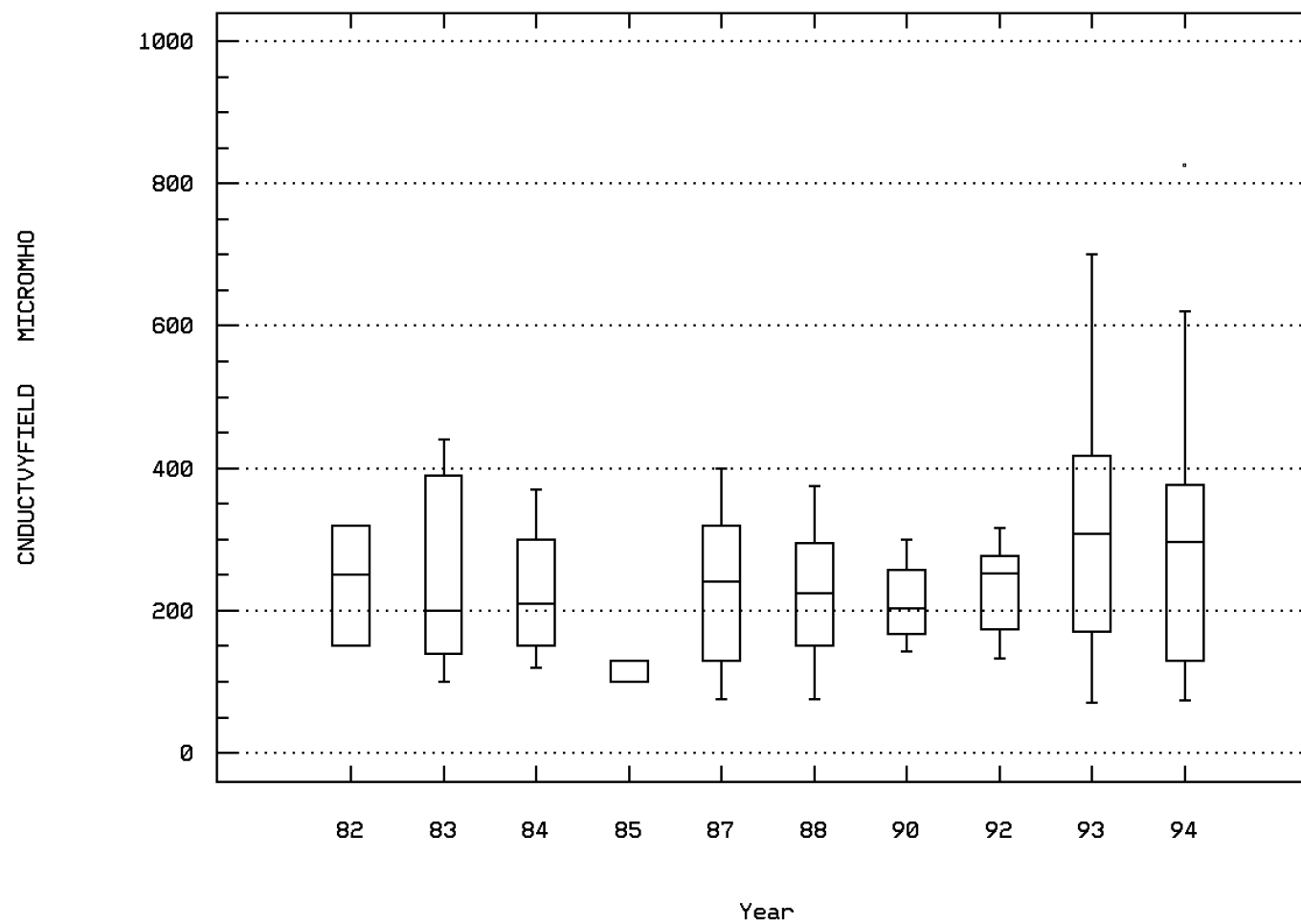
Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	19	17.	15.195	26.	1.	57.493	7.582	4.	10.	22.	25.
00094p	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	19	296.	305.158	825.	73.	35933.474	189.561	84.	130.	376.	621.
00299p	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	19	8.5	8.705	12.	4.5	4.918	2.218	4.8	7.5	10.2	12.
00406p	PH, FIELD, STANDARD UNITS SU	19	6.8	6.879	7.7	6.	0.198	0.445	6.3	6.6	7.2	7.5
00406p	CONVERTED PH, FIELD, STANDARD UNITS	19	6.8	6.67	7.7	6.	0.245	0.494	6.3	6.6	7.2	7.5
00406p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	19	0.158	0.214	1.	0.02	0.056	0.237	0.032	0.063	0.251	0.501
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	19	3.	4.579	19.	0.	24.368	4.936	0.	2.	7.	14.
82079p	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	19	3.6	6.695	17.9	1.6	28.481	5.337	2.1	2.4	12.3	14.5

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot



Station: MANA0030 Parameter Code: 00094

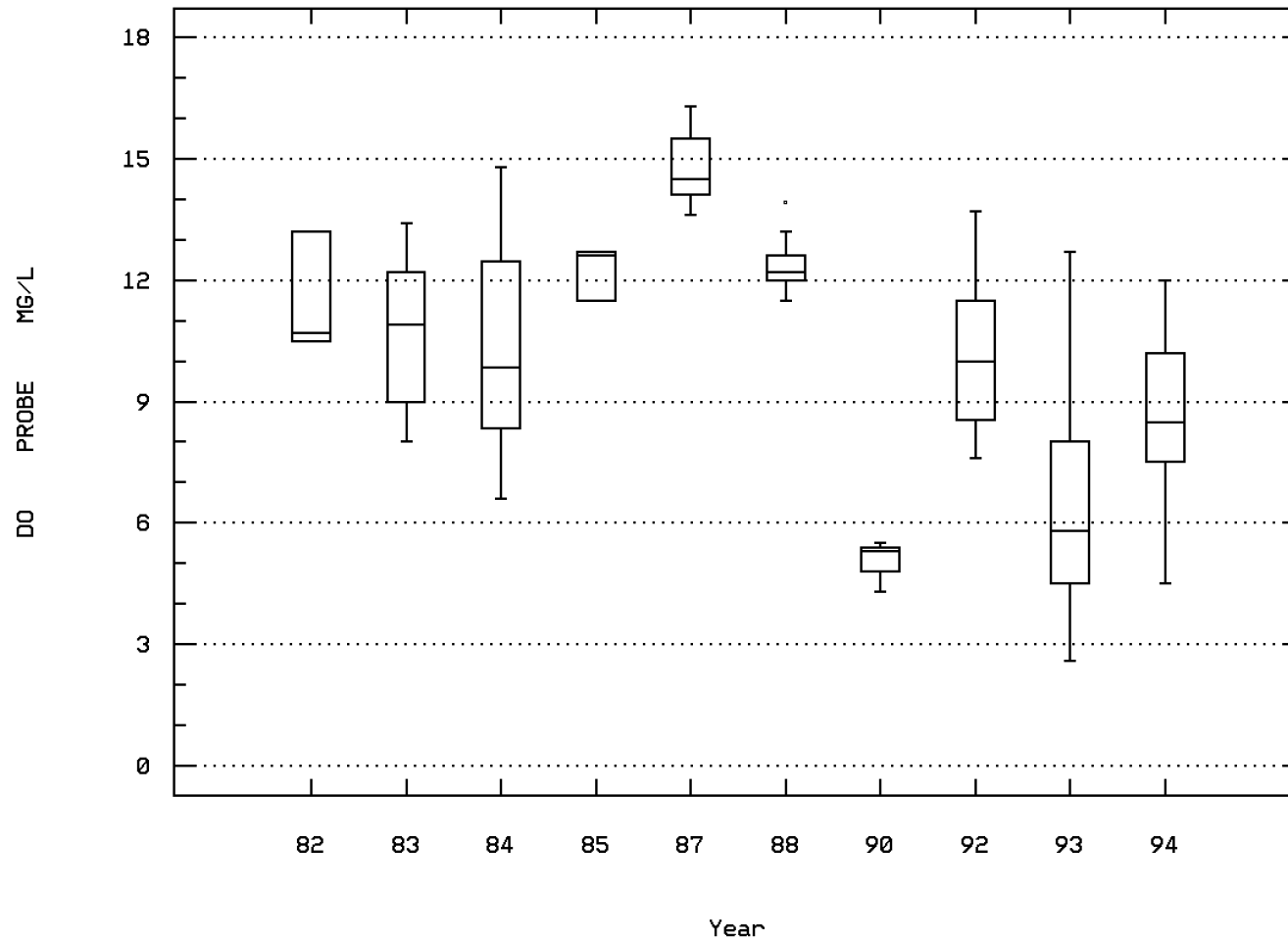
SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @



DOGAN BRANCH WARRENTON TURNPIKE

Station: MANA0030 Parameter Code: 00299

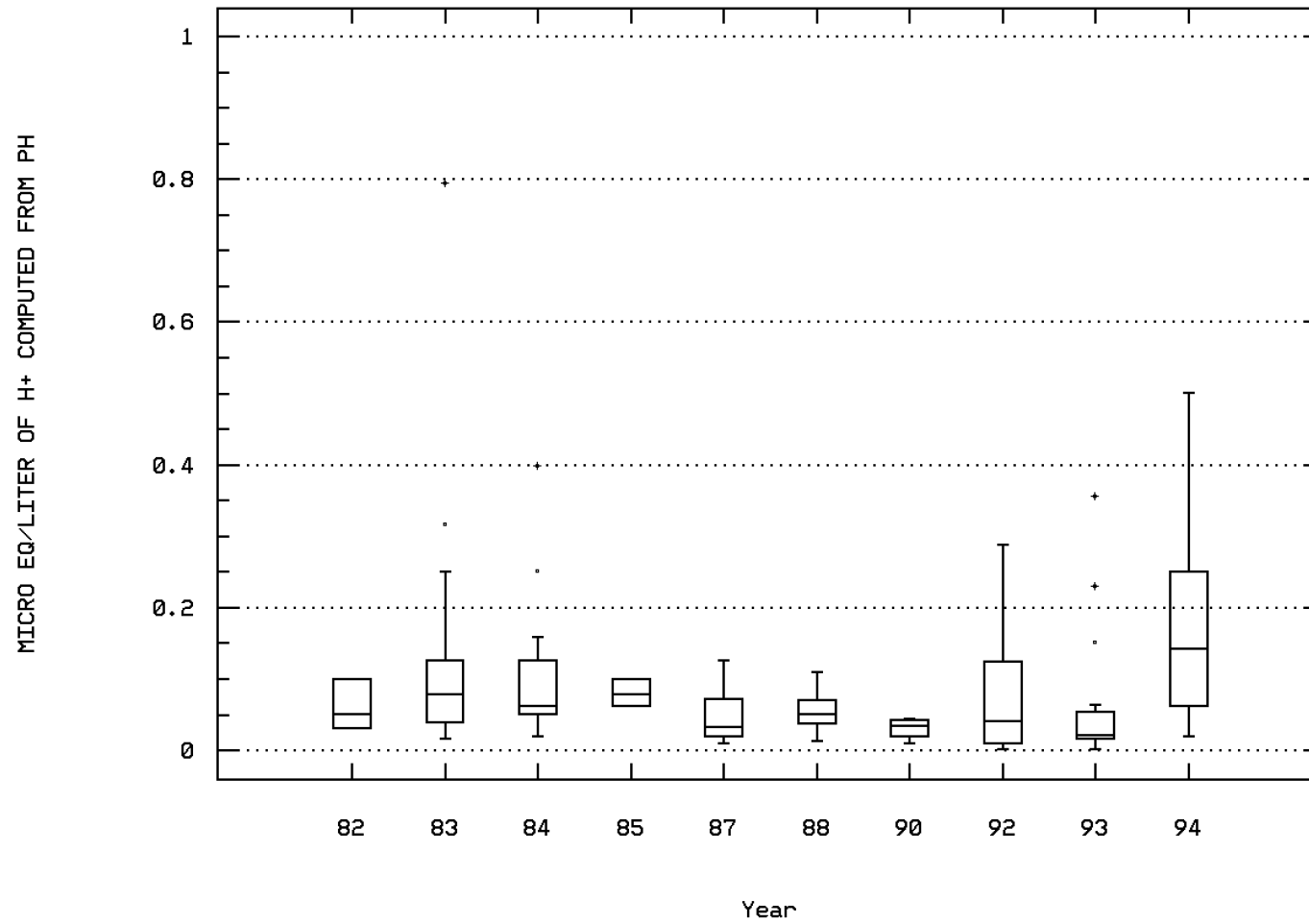
OXYGEN ,DISSOLVED, ANALYSIS BY PROBE



DOGAN BRANCH WARRENTON TURNPIKE

Station: MANA0030 Parameter Code: 00406

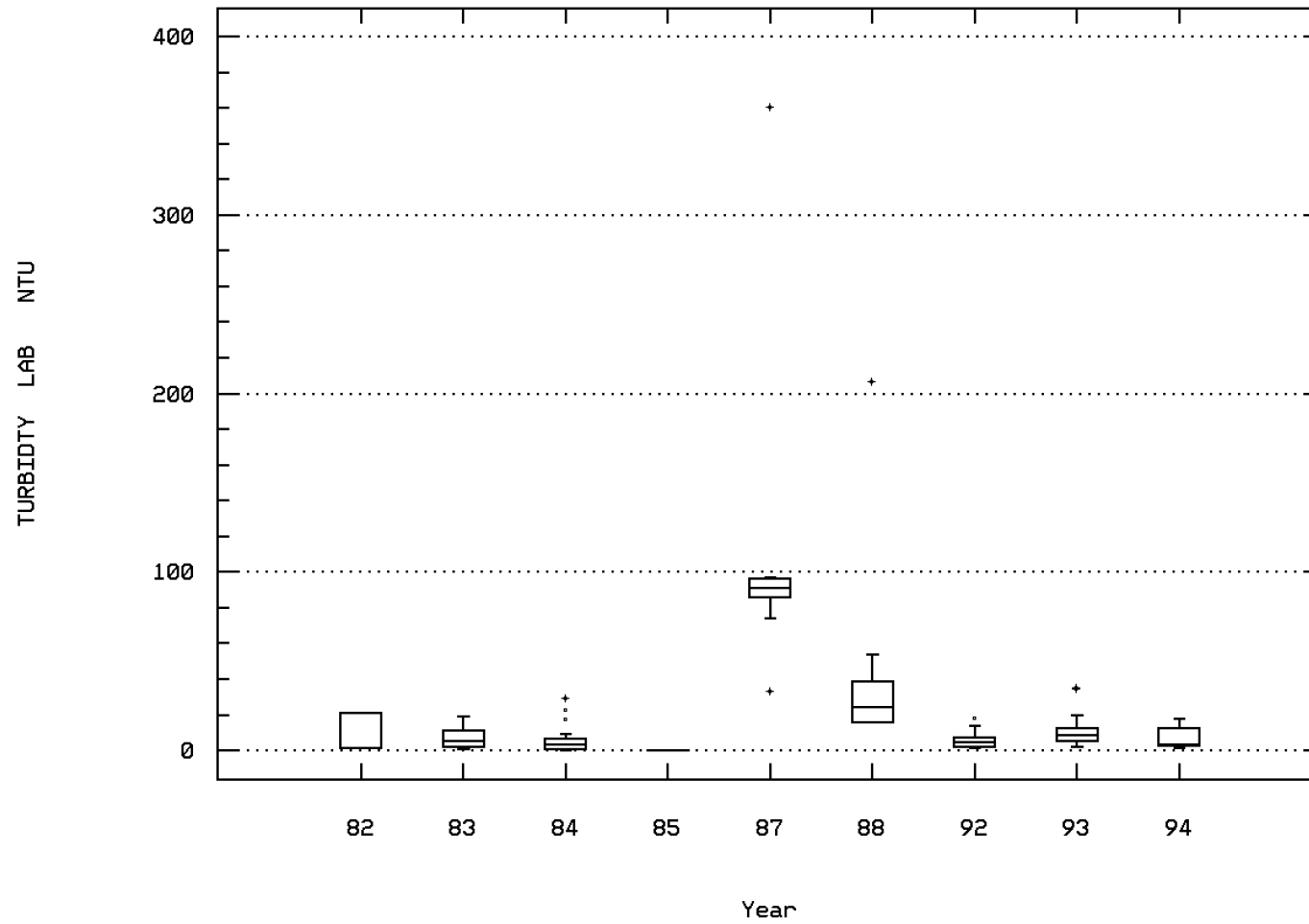
MICRO EQ/LITER OF H+ COMPUTED FROM PH



DOGAN BRANCH WARRENTON TURNPIKE

Station: MANA0030 Parameter Code: 82079

TURBIDITY,LAB NEPHELOMETRIC TURBIDITY U



DOGAN BRANCH WARRENTON TURNPIKE

### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0030

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	49	7.	7.069	23.	-3.	29.918	5.47	2.	4.55	11.	13.3
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	49	180.	209.592	442.	73.	10466.997	102.308	100.	131.	300.	366.
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	47	10.9	10.547	15.6	3.	9.115	3.019	5.3	9.2	12.7	13.94
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	49	7.07	7.044	7.99	6.1	0.133	0.364	6.6	6.775	7.3	7.5
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	49	7.07	6.893	7.99	6.1	0.156	0.395	6.6	6.775	7.3	7.5
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	49	0.085	0.128	0.794	0.01	0.017	0.129	0.032	0.05	0.168	0.251
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	43	2.	3.065	20.	0.	15.999	4.	0.05	0.1	5.	7.6
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	22	0.	7.455	80.	0.	359.784	18.968	0.	0.	1.75	34.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	22	0.	0.304	1.903	0.	0.374	0.611	0.	0.	0.151	1.512
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			2.014								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	44	5.95	8.455	91.	0.2	193.039	13.894	0.45	1.6	10.25	18.5

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0030

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	64	17.5	16.317	29.	0.6	47.723	6.908	6.75	10.5	21.875	25.
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	63	220.	236.175	825.	70.	18140.695	134.687	110.	130.	307.	388.
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	64	11.35	10.97	16.3	2.9	10.096	3.177	6.85	8.525	13.925	14.8
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	64	7.35	7.378	8.6	6.4	0.174	0.417	6.9	7.092	7.695	7.85
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	64	7.347	7.199	8.6	6.4	0.206	0.454	6.9	7.092	7.695	7.85
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	64	0.045	0.063	0.398	0.003	0.004	0.065	0.014	0.02	0.081	0.126
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	43	2.5	7.921	64.	0.	166.263	12.894	0.05	1.	9.	21.4
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	18	23.5	87.833	760.	0.	32909.559	181.41	0.	0.	93.	323.5
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	18	1.312	1.107	2.881	0.	1.047	1.023	0.	0.	1.968	2.483
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			12.791								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	64	13.3	34.444	360.	0.2	2958.301	54.39	1.5	3.525	64.25	95.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0030

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	12/02/82-11/13/94	36	22.2	21.764	28.8	14.5	12.053	3.472	17.35	19.	24.425	26.
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	12/02/82-11/13/94	36	330.	328.861	700.	150.	13663.38	116.89	167.5	251.25	387.5	432.3
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	12/02/82-11/13/94	34	8.55	9.176	14.7	2.6	10.635	3.261	4.9	7.1	12.05	14.25
00406	PH, FIELD, STANDARD UNITS SU	12/02/82-11/13/94	36	7.4	7.403	8.62	6.	0.282	0.531	6.51	7.193	7.8	7.906
00406	CONVERTED PH, FIELD, STANDARD UNITS	12/02/82-11/13/94	36	7.4	7.011	8.62	6.	0.44	0.663	6.51	7.193	7.8	7.906
00406	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	12/02/82-11/13/94	36	0.04	0.097	1.	0.002	0.037	0.193	0.012	0.016	0.064	0.326
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/02/82-11/13/94	23	4.	9.722	65.	0.05	194.794	13.957	0.23	2.	14.	24.4
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	14	9.	37.357	196.	0.	3324.863	57.662	0.	0.	60.	150.
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	12/02/82-10/27/94	14	0.952	0.962	2.292	0.	0.733	0.856	0.	0.	1.756	2.155
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			9.164								
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	12/02/82-11/13/94	36	6.75	27.397	206.	0.7	1846.788	42.974	1.37	2.15	30.75	91.2

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

## Station Inventory for Station: MANA0031

NPS Station ID: MANA0031  
 Location: BULL RUN AT RT 659 NEAR CATHARPIN, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin:  
 Minor Basin:  
 RF1 Index: 02070010  
 RF3 Index: 02070010006400.00  
 Description:

LAT/LON: 38.849170/ -77.546392

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 0.30

Agency: 112WRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): 01656735  
 Within Park Boundary: No

Date Created: / /

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.60  
 Distance from RF3: 0.03

On/Off RF1:  
 On/Off RF3:

### Parameter Inventory for Station: MANA0031

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	03/14/68-05/15/69	7	16.	15.286	24.	4.	60.571	7.783	**	**	**	**
00060 FLOW, STREAM, MEAN DAILY CFS	03/14/68-11/26/68	6	7.	17.84	79.	0.04	917.082	30.283	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	03/14/68-05/15/69	7	20.	17.143	27.	10.	50.143	7.081	**	**	**	**
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	03/14/68-05/15/69	7	167.	153.857	179.	124.	488.476	22.101	**	**	**	**
00400 PH (STANDARD UNITS)	03/14/68-05/15/69	7	7.4	7.414	7.9	7.	0.091	0.302	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	03/14/68-05/15/69	7	7.4	7.333	7.9	7.	0.099	0.315	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	03/14/68-05/15/69	7	0.04	0.046	0.1	0.013	0.001	0.029	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	03/14/68-05/15/69	7	52.	47.571	61.	21.	199.952	14.14	**	**	**	**
00440 BICARBONATE ION (MG/L AS HCO3)	03/14/68-05/15/69	7	64.	58.143	74.	26.	294.81	17.17	**	**	**	**
00445 CARBONATE ION (MG/L AS CO3)	03/14/68-05/15/69	7	0.	0.	0.	0.	0.	0.	**	**	**	**
00650 PHOSPHATE, TOTAL (MG/L AS PO4)	03/14/68-05/15/69	7	0.02	0.026	0.06	0.	0.	0.02	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	03/14/68-05/15/69	7	62.	58.714	67.	44.	68.571	8.281	**	**	**	**
00902 HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	03/14/68-05/15/69	7	7.	11.	23.	4.	56.667	7.528	**	**	**	**
00915 CALCIUM, DISSOLVED (MG/L AS Ca)	03/14/68-05/15/69	7	16.	15.571	18.	11.	7.619	2.76	**	**	**	**
00925 MAGNESIUM, DISSOLVED (MG/L AS MG)	03/14/68-05/15/69	7	4.9	4.9	5.6	4.	0.32	0.566	**	**	**	**
00930 SODIUM, DISSOLVED (MG/L AS Na)	03/14/68-05/15/69	7	6.	6.143	7.4	5.	0.863	0.929	**	**	**	**
00931 SODIUM ADSORPTION RATIO	03/14/68-05/15/69	7	0.4	0.357	0.4	0.3	0.003	0.053	**	**	**	**
00932 SODIUM, PERCENT	03/14/68-05/15/69	7	18.	18.	21.	16.	3.667	1.915	**	**	**	**
00935 POTASSIUM, DISSOLVED (MG/L AS K)	03/14/68-05/15/69	7	2.	2.357	4.7	1.6	1.243	1.115	**	**	**	**
00940 CHLORIDE, TOTAL IN WATER MG/L	03/14/68-05/15/69	7	8.	8.143	11.	6.	3.143	1.773	**	**	**	**
00945 SULFATE, TOTAL (MG/L AS SO4)	03/14/68-05/15/69	7	17.	15.571	21.	11.	20.952	4.577	**	**	**	**
00950 FLUORIDE, DISSOLVED (MG/L AS F)	03/14/68-05/15/69	7	0.1	0.071	0.1	0.	0.002	0.049	**	**	**	**
00955 SILICA, DISSOLVED (MG/L AS SiO2)	03/14/68-05/15/69	7	7.2	6.457	10.	1.9	11.79	3.434	**	**	**	**
01046 IRON, DISSOLVED (UG/L AS FE)	03/14/68-05/15/69	7	40.	34.286	80.	0.	1061.905	32.587	**	**	**	**
70300 RESIDUE, TOTAL FILTRABLE (DRIED AT 180C), MG/L	03/14/68-05/15/69	7	97.	96.143	105.	86.	58.476	7.647	**	**	**	**
70301 SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	03/14/68-05/15/69	7	89.	88.571	99.	78.	56.952	7.547	**	**	**	**
70302 SOLIDS, DISSOLVED-TONS PER DAY	03/14/68-11/26/68	6	1.79	4.265	18.4	0.01	49.211	7.015	**	**	**	**
70303 SOLIDS, DISSOLVED-TONS PER ACRE-FT	03/14/68-05/15/69	7	0.13	0.13	0.14	0.12	0.	0.008	**	**	**	**
71851 NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	03/14/68-05/15/69	7	0.8	1.114	3.4	0.2	1.308	1.144	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0031

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00400	PH																
	Other-Hi Lim.	9.	7	0	0.00	2	0	0.00	3	0	0.00	2	0	0.00			
	Other-Lo Lim.	6.5	7	0	0.00	2	0	0.00	3	0	0.00	2	0	0.00			
00940	CHLORIDE, TOTAL IN WATER																
	Fresh Acute	860.	7	0	0.00	2	0	0.00	3	0	0.00	2	0	0.00			
	Drinking Water	250.	7	0	0.00	2	0	0.00	3	0	0.00	2	0	0.00			
00945	SULFATE, TOTAL (AS SO4)																
	Drinking Water	250.	7	0	0.00	2	0	0.00	3	0	0.00	2	0	0.00			
00950	FLUORIDE, DISSOLVED AS F																
	Drinking Water	4.	7	0	0.00	2	0	0.00	3	0	0.00	2	0	0.00			
71851	NITRATE NITROGEN, DISSOLVED (AS NO3)																
	Drinking Water	44.	7	0	0.00	2	0	0.00	3	0	0.00	2	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0032

NPS Station ID: MANA0032      LAT/LON: 38.801338/ -77.549559

Location: YOUNGS BRANCH GROVETON ROAD TRIBUTARY

Station Type: /TYPA/AMBNT/STREAM

RMI-Indexes:

RMI-Miles:

HUC: 02070010

Major Basin: NORTH ATLANTIC

Minor Basin: POTOMAC RIVER

RF1 Index: 02070010

RF3 Index: 02070010059601.50

Description:

UNNAMED TRIBUTARY TO UPPER YOUNGS BRANCH ALONG GROVETON ROAD. SITE IS APPROXIMATELY 100 FEET UPSTREAM FROM THE CONCRETE CULVERT. SITE IS LOCATED ON THE GAINESVILLE VA 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE. IT IS THE RESPONSIBILITY OF MANASSAS NATIONAL BATTLEFIELD PARK - 6511 SUDLEY ROAD - MANASSAS VIRGINIA 22110 PH.(703)754-1861. FOR MORE INFORMATION CONTACT BARBARA MAULLER - RESOURCE MANAGEMENT - AT MANASSAS NATIONAL BATTLEFIELD PARK. DATA PROCESSED AND UPLOADED TO STORET BY RANDY SIDDENS AT NATIONAL PARK SERVICE WATER RESOURCE DIVISION IN FORT COLLINS COLORADO PH.(970)225-3556 FAX (970)225-9965.

Agency: 11NPSWRD

FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM

STORET Station ID(s): MANA\_03

Within Park Boundary: Yes

Date Created: 06/22/96

Depth of Water: 0

Elevation: 220

RF1 Mile Point: 0.000

RF3 Mile Point: 4.50

Aquifer:

Water Body Id:

ECO Region:

Distance from RF1: 0.00

Distance from RF3: 0.21

On/Off RF1:

On/Off RF3:

## Parameter Inventory for Station: MANA0032

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	01/23/92-11/13/94	51	16.4	14.929	27.	0.6	55.19	7.429	4.2	9.	22.	23.9
00020 TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	11	19.	18.727	26.5	10.5	31.418	5.605	10.8	12.5	23.5	26.4
00045 PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	20	0.	0.158	1.62	0.	0.14	0.375	0.	0.	0.178	0.56
00064 DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	25	0.2	0.588	1.7	0.1	0.338	0.581	0.1	0.15	1.2	1.54
00094 SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	01/23/92-11/13/94	51	315.	361.549	784.	110.	20293.893	142.457	214.	267.	449.	607.4
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	01/23/92-11/13/94	51	8.9	8.714	13.9	2.3	7.76	2.786	4.76	6.6	11.	11.98
00406 PH, FIELD, STANDARD UNITS SU	01/23/92-11/13/94	51	7.62	7.579	8.9	6.2	0.389	0.624	6.74	7.09	8.02	8.408
00406 CONVERTED PH, FIELD, STANDARD UNITS	01/23/92-11/13/94	51	7.62	7.151	8.9	6.2	0.576	0.759	6.74	7.09	8.02	8.408
00406 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	01/23/92-11/13/94	51	0.024	0.071	0.631	0.001	0.016	0.128	0.004	0.01	0.081	0.185
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/23/92-11/13/94	52	5.	21.221	262.	0.	2712.484	52.082	0.	1.25	13.25	32.7
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	5	0.23	0.352	0.87	0.05	0.127	0.357	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	2	0.645	0.645	0.66	0.63	0.	0.021	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	11/28/92-10/27/94	25	32.	76.	470.	0.	12466.583	111.654	0.	5.	134.	221.2
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	11/28/92-10/27/94	25	1.505	1.345	2.672	0.	0.691	0.831	0.	0.69	2.127	2.322
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			22.111								
82079 TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	01/23/92-11/13/94	51	4.1	19.684	255.	0.8	2460.095	49.599	1.04	2.2	13.	42.18
85663 FLOW, RATE FT/SEC	01/23/92-11/13/94	51	0.2	0.51	4.33	0.	0.848	0.921	0.	0.05	0.5	1.44

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot



### EPA Water Quality Criteria Analysis for Station: MANA0032

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	51	2	0.04	15	0	0.00	23	2	0.09	13	0	0.00			
00406 PH, FIELD	Other-Hi Lim.	9.	51	0	0.00	15	0	0.00	23	0	0.00	13	0	0.00			
	Other-Lo Lim.	6.5	51	2	0.04	15	1	0.07	23	1	0.04	13	0	0.00			
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	5	0	0.00	1	0	0.00	1	0	0.00	3	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	25	2	0.08	7	1	0.14	9	1	0.11	9	0	0.00			
82079 TURBIDITY, LAB	Other-Hi Lim.	50.	51	4	0.08	15	0	0.00	23	4	0.17	13	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0033

NPS Station ID: MANA0033 Location: YOUNGS BRANCH GROVETON ROAD Station Type: /TYPA/AMBNT/STREAM RMI-Indexes: RMI-Miles: HUC: 02070010 Major Basin: NORTH ATLANTIC Minor Basin: POTOMAC RIVER RF1 Index: 02070010 RF3 Index: 02070010059601.50 Description: UPPER YOUNGS BRANCH ALONG GROVETON ROAD AT JUNCTION WITH UNNAMED TRIBUTARY AND JUST DOWNSTREAM FROM THE HAZEL/PETERSON TRACT. SITE IS LOCATED ON THE GAINESVILLE VA 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE. IT IS THE RESPONSIBILITY OF MANASSAS NATIONAL BATTLEFIELD PARK - 6511 SUDLEY ROAD - MANASSAS VIRGINIA 22110 PH.(703)754-1861. FOR MORE INFORMATION CONTACT BARBARA MAULLER - RESOURCE MANAGEMENT - AT MANASSAS NATIONAL BATTLEFIELD PARK. DATA PROCESSED AND UPLOADED TO STORET BY RANDY SIDDENS AT NATIONAL PARK SERVICE WATER RESOURCE DIVISION IN FORT COLLINS COLORADO PH.(970)225-3556 FAX (970)225-9965.	LAT/LON: 38.801615/ -77.549753           Depth of Water: 0 Elevation: 210   RF1 Mile Point: 0.000 RF3 Mile Point: 4.50	Agency: 11NPSWRD FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM STORET Station ID(s): MANA_02 Within Park Boundary: Yes   Aquifer: Water Body Id: ECO Region: Distance from RF1: 0.00 Distance from RF3: 0.21
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Date Created: 06/22/96

On/Off RF1:  
On/Off RF3:

## Parameter Inventory for Station: MANA0033

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	10/11/90-11/13/94	56	15.5	15.414	28.	0.9	54.627	7.391	4.7	10.15	21.775	24.86
00020 TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	11	19.5	19.955	30.	10.	42.173	6.494	10.4	14.	26.	29.5
00045 PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	20	0.	0.158	1.62	0.	0.14	0.375	0.	0.	0.178	0.56
00061 FLOW, STREAM, INSTANTANEOUS CFS	10/11/90-11/26/90	4	10.	11.5	25.	1.	101.667	10.083	**	**	**	**
00064 DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	25	0.5	0.656	2.4	0.1	0.304	0.552	0.1	0.2	1.	1.34
00094 SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	10/11/90-11/13/94	56	386.5	519.125	1800.	113.	126890.511	356.217	171.8	241.5	746.5	975.3
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	10/11/90-11/13/94	56	7.8	7.946	12.4	2.8	6.618	2.573	4.44	5.85	9.8	12.06
00406 PH, FIELD, STANDARD UNITS SU	10/11/90-11/13/94	56	7.365	7.357	8.85	6.38	0.291	0.539	6.594	6.9	7.708	8.033
00406 CONVERTED PH, FIELD, STANDARD UNITS	10/11/90-11/13/94	56	7.364	7.072	8.85	6.38	0.373	0.611	6.594	6.9	7.708	8.033
00406 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	10/11/90-11/13/94	56	0.043	0.085	0.417	0.001	0.01	0.099	0.009	0.02	0.126	0.255
00480 SALINITY - PARTS PER THOUSAND	10/11/90-11/26/90	4	0.	0.	0.	0.	0.	0.	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/23/92-11/13/94	52	4.	12.087	170.	0.	769.811	27.745	1.	2.	10.	19.4
00630 NITRITE PLUS NITRATE, TOTAL I DET. (MG/L AS N)	08/08/93-10/27/94	5 ##	0.05	0.342	1.	0.05	0.184	0.429	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	2	0.395	0.395	0.42	0.37	0.001	0.035	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	11/28/92-10/27/94	24	26.5	45.458	174.	0.	2487.476	49.875	4.	8.25	79.75	136.5
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	11/28/92-10/27/94	24	1.423	1.367	2.241	0.	0.323	0.569	0.602	0.916	1.9	2.135
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			23.29								
82079 TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	01/23/92-11/13/94	52	4.1	7.602	49.	0.6	98.122	9.906	1.	1.675	9.775	18.49
85663 FLOW, RATE FT/SEC	01/23/92-11/13/94	52	0.4	0.663	3.39	0.	0.484	0.696	0.059	0.2	0.965	1.77

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0033

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	56	3	0.05	19	1	0.05	24	1	0.04	13	1	0.08			
00406 PH, FIELD	Other-Hi Lim.	9.	56	0	0.00	19	0	0.00	24	0	0.00	13	0	0.00			
	Other-Lo Lim.	6.5	56	3	0.05	19	2	0.11	24	0	0.00	13	1	0.08			
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	5	0	0.00	1	0	0.00	1	0	0.00	3	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	24	0	0.00	7	0	0.00	8	0	0.00	9	0	0.00			
82079 TURBIDITY, LAB	Other-Hi Lim.	50.	52	0	0.00	15	0	0.00	24	0	0.00	13	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0034

NPS Station ID: MANA0034  
 Location: UPPER YOUNGS BRANCH  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC RIVER  
 RF1 Index: 02070010  
 RF3 Index: 02070010059601.50

LAT/LON: 38.807837/ -77.565532

Depth of Water: 0  
 Elevation: 261

RF1 Mile Point: 0.000  
 RF3 Mile Point: 4.50

Agency: 11NPSWRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): MANA\_01  
 Within Park Boundary: Yes

Date Created: 06/22/96

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.21

On/Off RF1:  
 On/Off RF3:

Description:  
 UPPER YOUNGS BRANCH JUST DOWNSTREAM FROM WHERE THE WARRENTON TURNPIKE CROSSES STREAM AND UPSTREAM OF THE HAZEL/PETERSON TRACT.  
 SITE IS LOCATED ON THE GAINESVILLE VA 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE. IT IS THE RESPONSIBILITY OF MANASSAS NATIONAL BATTLEFIELD  
 PARK - 6511 SUDLEY ROAD - MANASSAS VIRGINIA 22110 PH.(703)754-1861. FOR MORE INFORMATION CONTACT BARBARA MAULLER - RESOURCE MANAGEMENT -  
 AT MANASSAS NATIONAL BATTLEFIELD PARK. DATA PROCESSED AND UPLOADED TO STORET BY RANDY SIDDENS AT NATIONAL PARK SERVICE WATER RESOURCE DIVISION  
 IN FORT COLLINS COLORADO PH.(970)225-3556 FAX (970)225-9965.

## Parameter Inventory for Station: MANA0034

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	01/23/92-11/13/94	50	14.	14.832	27.3	0.9	53.676	7.326	4.1	8.975	21.025	24.
00020 TEMPERATURE, AIR (DEGREES CENTIGRADE)	03/29/92-04/24/93	11	18.5	18.5	28.	10.	36.95	6.079	10.2	12.	25.	27.4
00045 PRECIPITATION, TOTAL (INCHES PER DAY)	12/15/93-11/13/94	20	0.	0.158	1.62	0.	0.14	0.375	0.	0.	0.178	0.56
00064 DEPTH OF STREAM, MEAN (FT)	02/27/92-10/24/93	24	0.2	0.354	1.4	0.	0.13	0.36	0.1	0.1	0.6	0.9
00094 SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	01/23/92-11/13/94	50	231.	512.9	1850.	45.	220417.969	469.487	99.4	129.75	1053.25	1121.8
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	01/23/92-11/13/94	50	8.45	7.536	12.8	0.3	10.921	3.305	2.61	4.45	9.9	11.58
00406 PH, FIELD, STANDARD UNITS SU	01/23/92-11/13/94	50	7.31	7.37	9.01	6.1	0.481	0.694	6.413	6.9	8.045	8.192
00406 CONVERTED PH, FIELD, STANDARD UNITS	01/23/92-11/13/94	50	7.31	6.926	9.01	6.1	0.683	0.826	6.413	6.9	8.045	8.192
00406 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	01/23/92-11/13/94	50	0.049	0.119	0.794	0.001	0.03	0.173	0.006	0.009	0.126	0.388
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	01/23/92-11/13/94	51	7.	27.48	320.	0.	3673.	60.605	2.	2.5	22.	66.6
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	08/08/93-10/27/94	5	0.14	0.524	1.81	0.05	0.551	0.743	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	08/08/93-09/18/93	2	0.685	0.685	0.8	0.57	0.026	0.163	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	06/29/94-10/27/94	3 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
31616 FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	11/28/92-10/27/94	24	34.5	94.875	400.	0.	15015.505	122.538	2.	10.25	194.25	308.
31616 LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	11/28/92-10/27/94	24	1.536	1.486	2.602	0.	0.597	0.773	0.301	1.01	2.283	2.488
31616 GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			30.605								
82079 TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	01/23/92-11/13/94	50	6.85	12.29	91.	0.7	236.945	15.393	1.4	3.375	14.375	31.7
85663 FLOW, RATE FT/SEC	01/23/92-11/13/94	50	0.175	0.572	3.31	0.	0.672	0.82	0.	0.05	0.863	2.151

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0034

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	50	10	0.20	15	0	0.00	23	2	0.09	12	8	0.67			
00406 PH, FIELD	Other-Hi Lim.	9.	50	1	0.02	15	0	0.00	23	0	0.00	12	1	0.08			
	Other-Lo Lim.	6.5	50	5	0.10	15	2	0.13	23	1	0.04	12	2	0.17			
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	5	0	0.00	1	0	0.00	1	0	0.00	3	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	24	6	0.25	7	1	0.14	9	3	0.33	8	2	0.25			
82079 TURBIDITY, LAB	Other-Hi Lim.	50.	50	1	0.02	15	0	0.00	23	1	0.04	12	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0035

NPS Station ID: MANA0035  
 Location: CUB RUN NEAR BULL RUN  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC  
 RF1 Index: 02070010  
 RF3 Index: 02070010006006.32

LAT/LON: 38.821115/ -77.465838

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 6.43

Agency: 21VAOCCO  
 FIPS State/County: 51059 VIRGINIA/FAIRFAX  
 STORET Station ID(s): 51ST50  
 Within Park Boundary: No

Date Created: / /

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.06

On/Off RF1:  
 On/Off RF3:

Description:  
 DESCRIPTION OPERATED BY OCCOQUAN WATERSHED MONITORING PROGRAM. ADJACENT GAGING STA-  
 TION OPERATED BY VA. SWCB. AUTOMATIC SAMPLING EQUIPMENT PROGRAMMED TO RETRIEVE ALIQUOTS AT 0.5 FT. INCREMENTS OF STAGE. DRAINAGE AREA AT THE  
 GAGE IS 050 SQ.MI. 05 MAJOR WASTE DISCHARGES UPSTREAM OF STATION. MAJOR LAND USE IN SUB-BASIN IS SUBURBAN. MONITORING PROGRAM CONDUCTS A  
 WEEKLY GRAB SAMPLING PROGRAM IN ADDITION TO THE AUTOMATED SAMPLING.

### Parameter Inventory for Station: MANA0035

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	215	15.5	14.405	27.	0.	61.477	7.841	3.	7.	21.	24.2
00061 FLOW, STREAM, INSTANTANEOUS CFS	01/07/75-06/29/78	709	96.	340.599	8930.	0.7	626575.074	791.565	8.	21.	310.	709.
00065 STAGE, STREAM (FEET)	03/25/74-06/29/78	192	2.3	2.827	10.05	1.45	2.637	1.624	1.64	1.9	2.96	5.05
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	06/17/74-07/09/74	4	260.	229.5	270.	128.	4601.	67.831	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	213	9.3	9.676	20.5	5.3	5.595	2.365	6.9	7.8	11.35	13.12
00310 BOD, 5 DAY, 20 DEG C MG/L	02/06/75-06/21/78	53	2.3	2.636	8.4	0.	2.329	1.526	1.1	1.7	3.25	5.12
00335 COD, .025N K2CR2O7 MG/L	11/04/77-06/29/78	3	54.3	81.733	139.	51.9	2461.043	49.609	**	**	**	**
00400 PH (STANDARD UNITS)	02/06/73-06/21/78	177	7.1	7.083	8.3	6.	0.224	0.473	6.4	6.7	7.4	7.7
00400 CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	177	7.1	6.842	8.3	6.	0.282	0.531	6.4	6.7	7.4	7.7
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	177	0.079	0.144	1.	0.005	0.027	0.164	0.02	0.04	0.2	0.398
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	209	44.	43.206	70.	15.	121.308	11.014	27.	37.	50.	58.
00430 ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	111	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/06/73-06/29/78	614	18.	57.137	1364.	0.	12542.542	111.993	5.	8.	54.	155.5
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	197	3.	4.152	66.	0.	34.074	5.837	1.	2.	5.	7.
00600 NITROGEN, TOTAL (MG/L AS N)	01/03/76-06/29/78	295	3.05	3.263	7.12	1.04	1.47	1.212	1.78	2.37	4.03	5.16
00605 NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-06/29/78	313	1.04	1.118	2.95	0.01	0.213	0.461	0.634	0.84	1.32	1.642
00607 NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)	01/27/76-06/29/78	275	0.79	0.844	2.18	0.26	0.092	0.303	0.526	0.67	1.	1.184
00608 NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	09/04/73-06/29/78	710	0.2	0.286	3.03	0.	0.08	0.283	0.062	0.12	0.34	0.58
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/13/73-08/27/73	19	0.12	0.107	0.35	0.011	0.006	0.076	0.023	0.052	0.135	0.178
00613 NITRITE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	71	0.062	0.088	1.25	0.	0.022	0.149	0.017	0.03	0.1	0.138
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	28	0.066	0.074	0.25	0.009	0.003	0.051	0.018	0.034	0.104	0.125
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-12/30/74	71	1.52	1.893	5.65	0.4	1.176	1.084	0.734	1.06	2.72	3.402
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	28	1.417	1.616	4.615	0.411	0.712	0.844	0.855	1.014	2.059	2.622
00623 NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	01/27/76-06/29/78	275	1.15	1.236	4.07	0.48	0.229	0.478	0.766	0.94	1.42	1.774
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/04/73-06/29/78	784	1.66	1.825	22.	0.11	1.333	1.155	0.945	1.3	2.118	2.915
00631 NITRITE PLUS NITRATE, DISS. I DET. (MG/L AS N)	01/14/75-06/29/78	697	1.2	1.472	5.5	0.06	0.948	0.974	0.5	0.7	2.	3.
00665 PHOSPHORUS, TOTAL (MG/L AS P)	03/06/73-06/29/78	798	0.3	0.377	2.37	0.05	0.079	0.282	0.14	0.21	0.46	0.652
00666 PHOSPHORUS, DISSOLVED (MG/L AS P)	01/14/76-06/29/78	279	0.18	0.185	0.76	0.02	0.011	0.105	0.07	0.1	0.24	0.31
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-06/29/78	729	0.15	0.236	2.37	0.	0.078	0.279	0.05	0.08	0.29	0.48

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0035

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	234	6.5	6.751	18.5	1.6	8.072	2.841	3.75	5.	8.	9.85
00681 CARBON, DISSOLVED ORGANIC (MG/L AS C)	03/31/76-06/21/78	57	6.5	6.293	10.4	0.	3.659	1.913	3.66	5.1	7.75	8.5
00691 CARBON, DISSOLVED INORGANIC (MG/L AS C)	06/04/73-06/20/73	3	8.9	8.967	10.5	7.5	2.253	1.501	**	**	**	**
31505 COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	03/13/73-05/13/74	5	2400.	6272.	24000.	150.	101574170.	10078.401	**	**	**	**
31505 LOG COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	03/13/73-05/13/74	5	3.38	3.184	4.38	2.176	0.864	0.93	**	**	**	**
31505 GM COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	GEOMETRIC MEAN =			1528.615								
31615 FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	03/13/73-06/21/78	44	90.	674.83	11000.	0.	3316467.604	1821.117	6.5	23.	413.25	2250.
31615 LOG FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	03/13/73-06/21/78	44	1.954	1.979	4.041	0.	0.83	0.911	0.778	1.362	2.615	3.351
31615 GM FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	GEOMETRIC MEAN =			95.284								
31678 FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATION	06/20/73-07/23/73	2	840.	840.	930.	750.	16200.	127.279	**	**	**	**
31678 LOG FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATION	06/20/73-07/23/73	2	2.922	2.922	2.968	2.875	0.004	0.066	**	**	**	**
31678 GM FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATION	GEOMETRIC MEAN =			835.165								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0035

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	213	0	0.00	84	0	0.00	83	0	0.00	46	0	0.00			
00400 PH	Other-Hi Lim.	9.	177	0	0.00	62	0	0.00	71	0	0.00	44	0	0.00			
	Other-Lo Lim.	6.5	177	29	0.16	62	14	0.23	71	11	0.15	44	4	0.09			
00613 NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	71	1	0.01	36	0	0.00	17	0	0.00	18	1	0.06			
00615 NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	28	0	0.00	6	0	0.00	15	0	0.00	7	0	0.00			
00618 NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	71	0	0.00	36	0	0.00	17	0	0.00	18	0	0.00			
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	28	0	0.00	6	0	0.00	15	0	0.00	7	0	0.00			
00631 NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	697	0	0.00	186	0	0.00	334	0	0.00	177	0	0.00			
31505 COLIFORM, TOTAL, MPN, CONF. TEST, 35C	Other-Hi Lim.	1000.	5	3	0.60	1	0	0.00	3	2	0.67	1	1	1.00			
31615 FECAL COLIFORM, MPN	Other-Hi Lim.	200.	44	14	0.32	14	2	0.14	18	7	0.39	12	5	0.42			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### Annual Analysis for 1973 - Station MANA0035

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	44	16.	15.295	27.	1.	60.155	7.756	5.	7.5	22.375	25.
00300p	OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	43	9.	9.395	13.8	6.7	3.116	1.765	7.38	7.9	10.6	12.2
00400p	PH (STANDARD UNITS)	02/06/73-06/21/78	27	7.1	7.078	8.2	6.1	0.351	0.592	6.26	6.5	7.5	7.82
00400p	CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	27	7.1	6.735	8.2	6.1	0.473	0.688	6.26	6.5	7.5	7.82
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	27	0.079	0.184	0.794	0.006	0.052	0.227	0.015	0.032	0.316	0.56
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	40	45.	42.875	70.	15.	166.01	12.884	26.	32.	50.75	59.8
00430	ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/06/73-06/29/78	44	7.	15.864	126.	1.	680.167	26.08	2.5	4.25	15.	28.
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	44	3.	4.545	14.	1.	11.975	3.46	1.	2.	6.	10.
00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-06/29/78	18	0.265	0.349	0.945	0.01	0.062	0.25	0.127	0.17	0.435	0.851
00608p	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	09/04/73-06/29/78	16	0.153	0.233	0.983	0.037	0.072	0.269	0.04	0.06	0.248	0.82
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/04/73-06/29/78	29	0.355	0.378	0.991	0.11	0.039	0.197	0.18	0.237	0.455	0.565
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	03/06/73-06/29/78	40	1.03	1.046	2.37	0.09	0.441	0.664	0.204	0.351	1.569	1.892
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-06/29/78	42	0.901	0.956	2.37	0.046	0.42	0.648	0.179	0.328	1.455	1.803
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	34	6.55	6.779	18.5	1.6	13.319	3.649	2.1	4.5	8.025	12.75

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1974 - Station MANA0035

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	51	12.	12.98	25.5	1.	53.79	7.334	3.	7.	20.5	22.
00065	STAGE, STREAM (FEET)	03/25/74-06/29/78	45	1.86	2.17	8.74	1.45	1.487	1.219	1.502	1.575	2.225	3.308
00300p	OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	51	9.7	10.053	14.4	5.9	4.547	2.132	7.32	8.3	11.9	12.8
00400p	PH (STANDARD UNITS)	02/06/73-06/21/78	35	7.3	7.286	8.	6.4	0.112	0.335	6.9	7.1	7.5	7.74
00400p	CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	35	7.3	7.154	8.	6.4	0.13	0.361	6.9	7.1	7.5	7.74
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	35	0.05	0.07	0.398	0.01	0.005	0.069	0.018	0.032	0.079	0.126
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	51	43.	41.49	65.	16.	153.695	12.397	20.6	33.	50.	56.6
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/06/73-06/29/78	55	7.	16.327	158.	0.	605.706	24.611	2.	5.	20.	39.6
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	49	3.	3.878	30.	0.	20.526	4.531	0.	2.	5.	7.
00608p	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	09/04/73-06/29/78	54	0.23	0.34	1.84	0.019	0.127	0.357	0.074	0.15	0.38	0.7
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/04/73-06/29/78	53	1.12	1.814	22.	0.219	10.43	3.23	0.322	0.412	1.75	3.39
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	03/06/73-06/29/78	54	0.408	0.423	1.08	0.088	0.058	0.241	0.117	0.234	0.561	0.713
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-06/29/78	55	0.35	0.346	1.08	0.03	0.053	0.229	0.077	0.189	0.463	0.682
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	66	5.9	6.935	18.	2.	13.834	3.719	3.44	4.5	7.5	13.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1975 - Station MANA0035

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	39	18.	15.731	27.	2.	62.616	7.913	5.	8.5	22.5	25.5
00061	FLOW, STREAM, INSTANTANEOUS CFS	01/07/75-06/29/78	407	169.	417.86	8930.	1.	823116.535	907.258	26.	68.	385.	840.
00300p	OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	39	9.3	9.636	14.2	7.1	3.361	1.833	7.4	8.	10.8	12.4
00310	BOD, 5 DAY, 20 DEG C MG/L	02/06/75-06/21/78	17	1.9	2.012	5.5	0.	1.456	1.207	0.	1.65	2.3	3.74
00400p	PH (STANDARD UNITS)	02/06/73-06/21/78	37	7.1	7.097	8.3	6.2	0.168	0.41	6.6	6.75	7.35	7.62
00400p	CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	37	7.1	6.928	8.3	6.2	0.198	0.445	6.6	6.75	7.35	7.62
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	37	0.079	0.118	0.631	0.005	0.013	0.116	0.024	0.045	0.179	0.251
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	37	45.	45.541	65.	20.	133.366	11.548	31.	38.	55.5	62.6
00430	ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/06/73-06/29/78	223	40.	70.166	1364.	3.	12475.211	111.692	8.	16.	82.	178.8
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	34	3.	5.388	66.	0.4	119.505	10.932	1.	2.	5.	7.
00608p	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	09/04/73-06/29/78	341	0.16	0.199	0.94	0.02	0.018	0.132	0.08	0.12	0.24	0.34
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/04/73-06/29/78	403	1.95	2.136	9.	0.8	0.742	0.861	1.33	1.58	2.52	3.25
00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	01/14/75-06/29/78	398	1.	1.288	3.8	0.2	0.648	0.805	0.5	0.7	1.7	2.6

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot



### Annual Analysis for 1975 - Station MANA0035

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00665p PHOSPHORUS, TOTAL (MG/L AS P)	03/06/73-06/29/78	405	0.32	0.381	1.45	0.05	0.037	0.191	0.18	0.24	0.52	0.658
00671p PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-06/29/78	341	0.14	0.209	0.74	0.01	0.024	0.155	0.062	0.09	0.31	0.448
00680p CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	58	6.	6.343	14.3	2.	3.755	1.938	4.8	5.3	7.075	8.76

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1976 - Station MANA0035

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	31	15.	14.406	26.	0.2	64.447	8.028	2.7	6.5	22.5	24.4
00061 FLOW, STREAM, INSTANTANEOUS CFS	01/07/75-06/29/78	241	41.	288.982	3650.	0.7	417267.887	645.963	8.	14.	206.5	777.4
00065 STAGE, STREAM (FEET)	03/25/74-06/29/78	86	2.68	3.493	10.05	1.64	3.915	1.979	1.8	2.15	4.313	7.053
00300p OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	31	9.8	10.161	20.5	6.	9.204	3.034	6.9	7.8	12.	13.64
00310 BOD, 5 DAY, 20 DEG C MG/L	02/06/75-06/21/78	13	2.3	2.569	5.4	0.5	2.066	1.437	0.7	1.35	3.45	5.12
00400p PH (STANDARD UNITS)	02/06/73-06/21/78	31	6.9	6.955	7.9	6.	0.213	0.462	6.32	6.7	7.3	7.58
00400p CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	31	6.9	6.735	7.9	6.	0.263	0.513	6.32	6.7	7.3	7.58
00400p MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	31	0.126	0.184	1.	0.013	0.042	0.205	0.026	0.05	0.2	0.481
00410p ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	31	43.	42.71	61.	23.	61.746	7.858	33.	38.	47.	54.
00430 ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530p RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/06/73-06/29/78	233	17.	70.495	1032.	0.3	19023.931	137.927	4.	8.	55.	214.
00535p RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	23	1.	1.839	5.	0.	1.741	1.319	0.12	1.	3.	3.6
00605 NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-06/29/78	236	1.13	1.191	2.95	0.39	0.196	0.443	0.77	0.88	1.36	1.703
00608p NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	09/04/73-06/29/78	240	0.26	0.313	1.31	0.	0.063	0.251	0.04	0.12	0.448	0.669
00625p NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/04/73-06/29/78	240	1.44	1.512	3.19	0.56	0.231	0.481	1.01	1.18	1.778	2.106
00631 NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	01/14/75-06/29/78	240	1.4	1.594	5.5	0.06	1.266	1.125	0.4	0.7	2.1	3.4
00665p PHOSPHORUS, TOTAL (MG/L AS P)	03/06/73-06/29/78	240	0.26	0.277	1.26	0.07	0.025	0.158	0.12	0.16	0.358	0.45
00671p PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-06/29/78	232	0.11	0.134	0.55	0.	0.01	0.102	0.02	0.06	0.19	0.27
00680p CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	27	7.	6.756	9.5	2.5	4.402	2.098	3.24	5.	8.5	9.18

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Annual Analysis for 1977 - Station MANA0035

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	33	18.5	16.394	25.5	0.	49.231	7.016	4.	12.25	22.	24.6
00061 FLOW, STREAM, INSTANTANEOUS CFS	01/07/75-06/29/78	41	9.	17.512	120.	3.	626.106	25.022	4.	5.5	16.5	46.8
00065 STAGE, STREAM (FEET)	03/25/74-06/29/78	41	2.08	2.228	3.73	1.67	0.238	0.487	1.75	1.89	2.445	2.96
00300p OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	32	7.25	8.309	13.8	5.3	6.354	2.521	5.76	6.4	10.25	12.68
00310 BOD, 5 DAY, 20 DEG C MG/L	02/06/75-06/21/78	13	3.2	3.654	8.4	1.5	3.673	1.916	1.62	2.4	4.85	7.28
00400p PH (STANDARD UNITS)	02/06/73-06/21/78	31	7.	7.055	7.9	6.2	0.265	0.514	6.4	6.5	7.6	7.78
00400p CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	31	7.	6.803	7.9	6.2	0.33	0.574	6.4	6.5	7.6	7.78
00400p MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	31	0.1	0.157	0.631	0.013	0.025	0.157	0.017	0.025	0.316	0.398
00410p ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	33	47.	47.03	68.	33.	56.718	7.531	37.	40.5	51.5	56.8
00430 ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	33	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530p RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/06/73-06/29/78	40	11.	29.6	280.	3.	3243.733	56.954	6.	8.25	15.75	72.2
00535p RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	32	4.	4.766	33.	0.5	30.887	5.558	2.	2.	5.	8.7
00605 NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-06/29/78	40	1.085	1.133	2.	0.37	0.086	0.293	0.816	0.955	1.32	1.51
00608p NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	09/04/73-06/29/78	40	0.455	0.623	3.03	0.11	0.308	0.555	0.182	0.28	0.873	1.095
00625p NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/04/73-06/29/78	40	1.67	1.755	4.07	1.08	0.328	0.573	1.199	1.35	1.94	2.369
00631 NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	01/14/75-06/29/78	40	2.2	2.303	4.6	1.	0.993	0.996	1.1	1.4	3.075	3.89
00665p PHOSPHORUS, TOTAL (MG/L AS P)	03/06/73-06/29/78	40	0.27	0.276	0.55	0.1	0.011	0.106	0.141	0.188	0.348	0.428
00671p PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-06/29/78	40	0.14	0.168	0.33	0.05	0.007	0.081	0.08	0.103	0.22	0.3
00680p CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	32	7.75	7.769	12.	3.5	3.513	1.874	5.5	6.775	8.5	11.02

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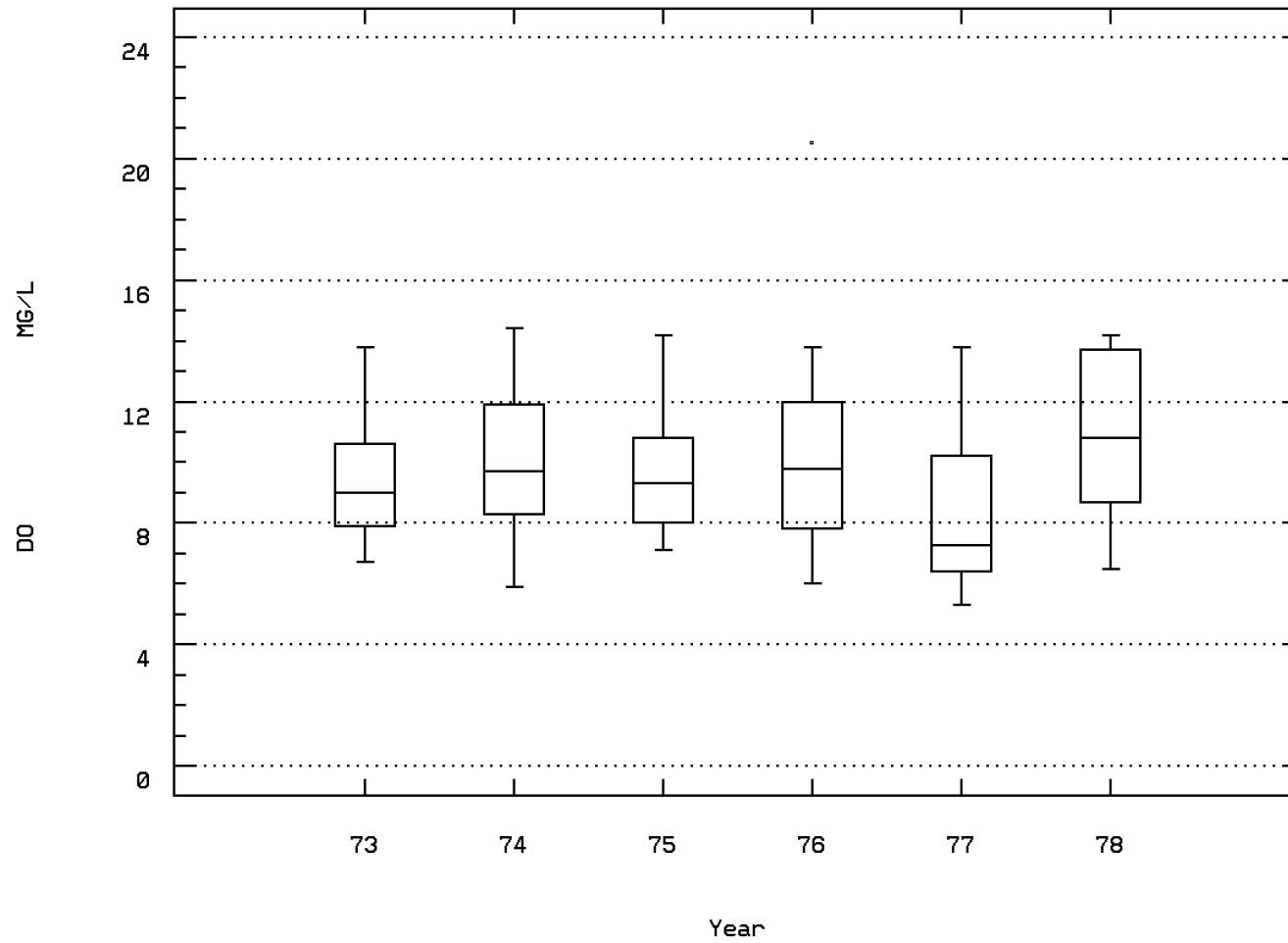
### Annual Analysis for 1978 - Station MANA0035

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-06/21/78	17	10.5	9.471	25.5	0.	77.515	8.804	0.4	1.	17.75	21.5
00061	FLOW, STREAM, INSTANTANEOUS CFS	01/07/75-06/29/78	20	13.5	52.65	492.	5.	13202.029	114.9	6.1	9.5	22.	204.7
00065	STAGE, STREAM (FEET)	03/25/74-06/29/78	20	2.345	2.67	6.53	1.86	1.217	1.103	1.932	2.103	2.623	4.432
00300p	OXYGEN, DISSOLVED MG/L	02/06/73-06/21/78	17	10.8	11.029	14.2	6.5	7.385	2.717	7.22	8.55	13.75	14.12
00310	BOD, 5 DAY, 20 DEG C MG/L	02/06/75-06/21/78	10	2.65	2.46	3.8	1.1	0.945	0.972	1.1	1.4	3.35	3.77
00400p	PH (STANDARD UNITS)	02/06/73-06/21/78	16	6.85	6.919	7.9	6.3	0.244	0.494	6.37	6.5	7.275	7.69
00400p	CONVERTED PH (STANDARD UNITS)	02/06/73-06/21/78	16	6.847	6.715	7.9	6.3	0.289	0.537	6.37	6.5	7.275	7.69
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-06/21/78	16	0.142	0.193	0.501	0.013	0.025	0.159	0.021	0.053	0.316	0.429
00410p	ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-06/21/78	17	39.	37.529	50.	20.	75.64	8.697	24.	31.5	44.	50.
00430	ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-06/21/78	17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
00530p	RESIDUE, TOTAL NONFILTRABLE (MG/L)	02/06/73-06/29/78	19	7.	12.105	45.	4.	123.655	11.12	5.	6.	14.	36.
00535p	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	02/06/73-06/21/78	15	4.	3.333	5.	0.	2.238	1.496	1.2	2.	5.	5.
00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-06/29/78	19	0.83	0.921	2.26	0.4	0.186	0.431	0.56	0.62	1.01	1.63
00608p	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	09/04/73-06/29/78	19	0.48	0.679	1.85	0.18	0.294	0.542	0.2	0.28	1.2	1.65
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/04/73-06/29/78	19	1.46	1.601	4.11	0.74	0.547	0.74	1.03	1.1	1.82	2.54
00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	01/14/75-06/29/78	19	1.9	2.037	3.9	1.2	0.589	0.768	1.2	1.4	2.3	3.6
00665p	PHOSPHORUS, TOTAL (MG/L AS P)	03/06/73-06/29/78	19	0.18	0.257	0.83	0.08	0.04	0.2	0.1	0.12	0.3	0.72
00671p	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-06/29/78	19	0.14	0.209	0.74	0.04	0.035	0.188	0.06	0.1	0.23	0.65
00680p	CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-06/21/78	17	5.7	5.453	7.3	3.	1.939	1.392	3.08	4.3	6.7	7.14

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0035 Parameter Code: 00300

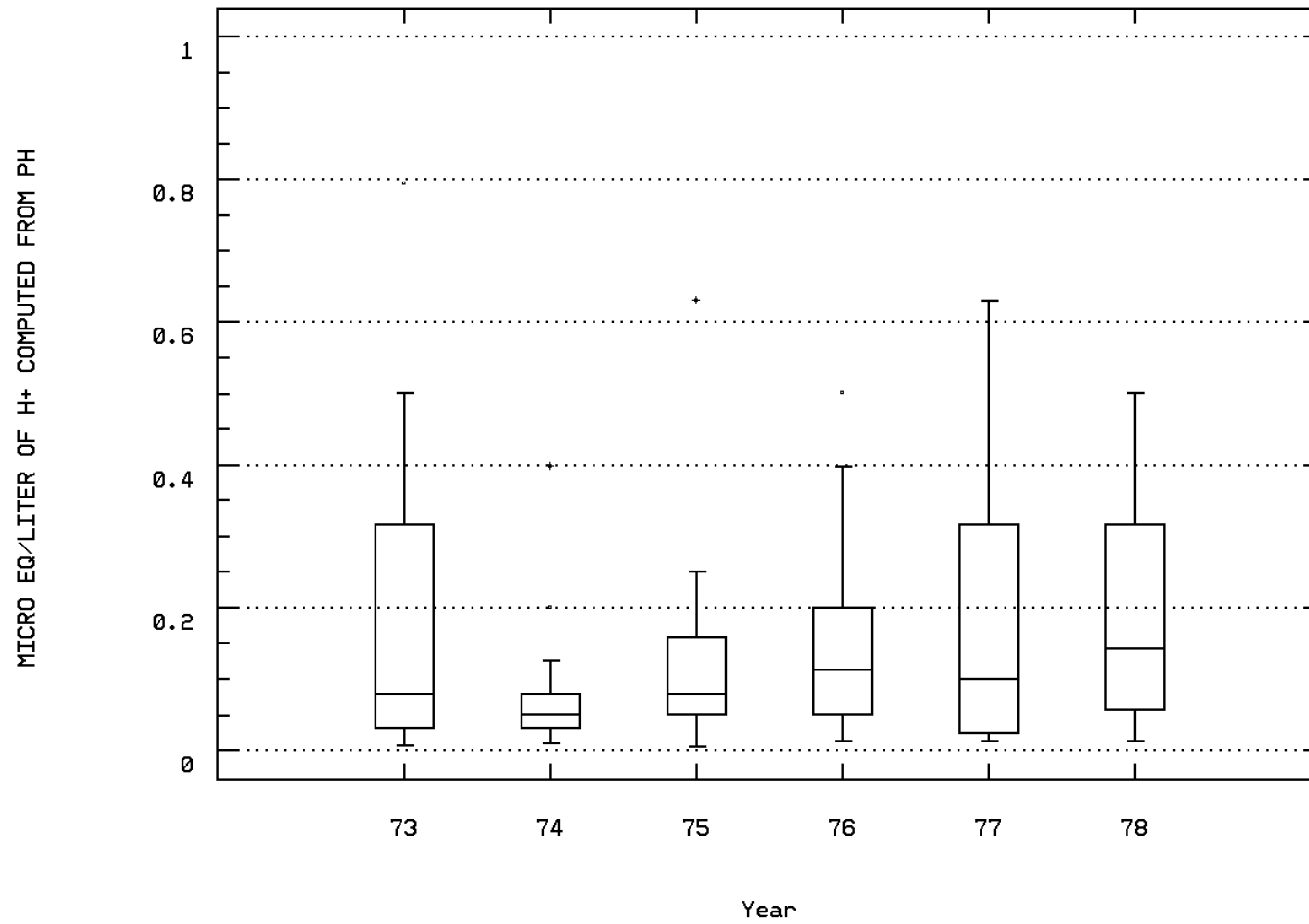
OXYGEN, DISSOLVED



CUB RUN NEAR BULL RUN

Station: MANA0035 Parameter Code: 00400

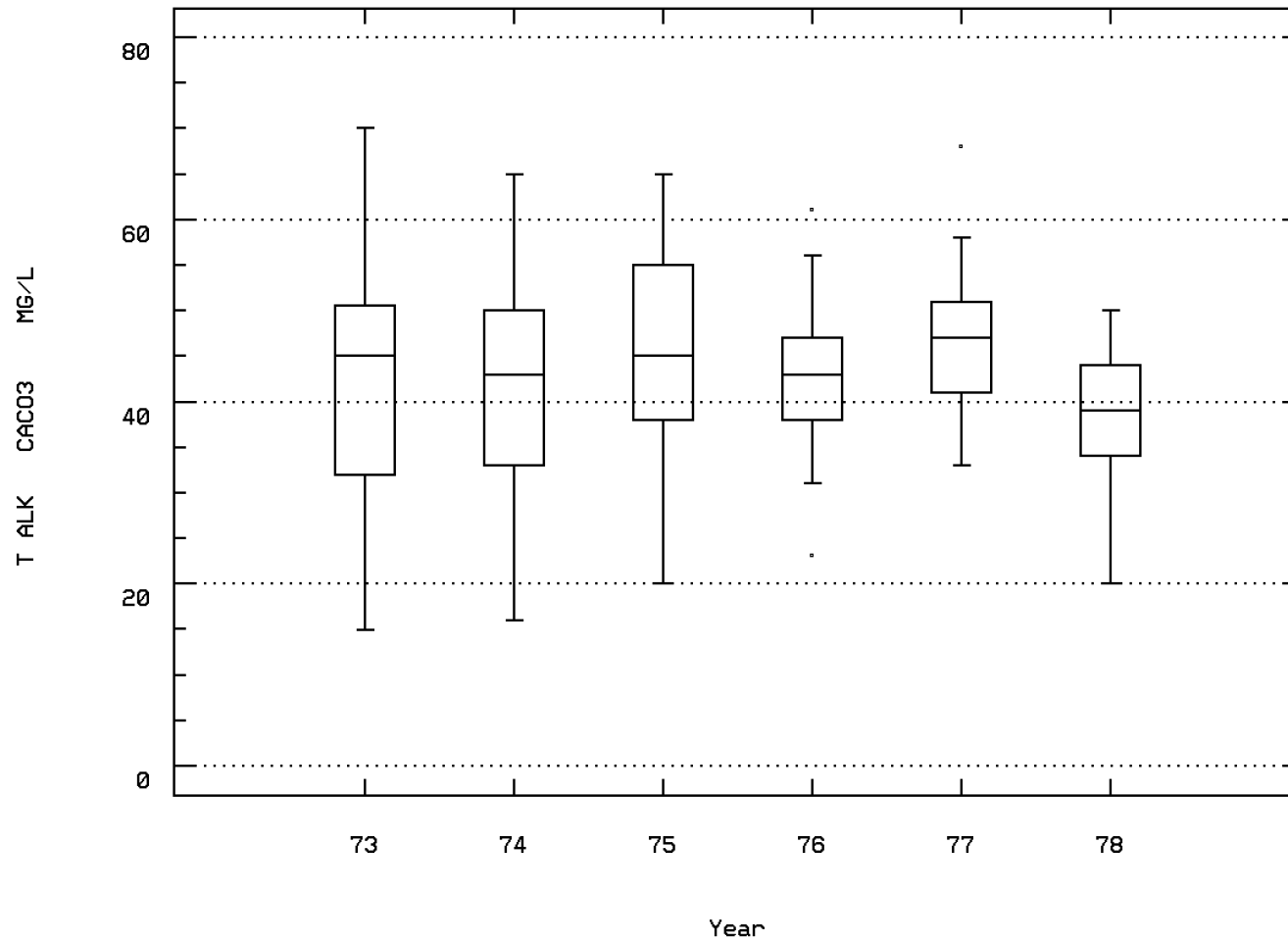
MICRO EQ/LITER OF H+ COMPUTED FROM PH



CUB RUN NEAR BULL RUN

Station: MANA0035 Parameter Code: 00410

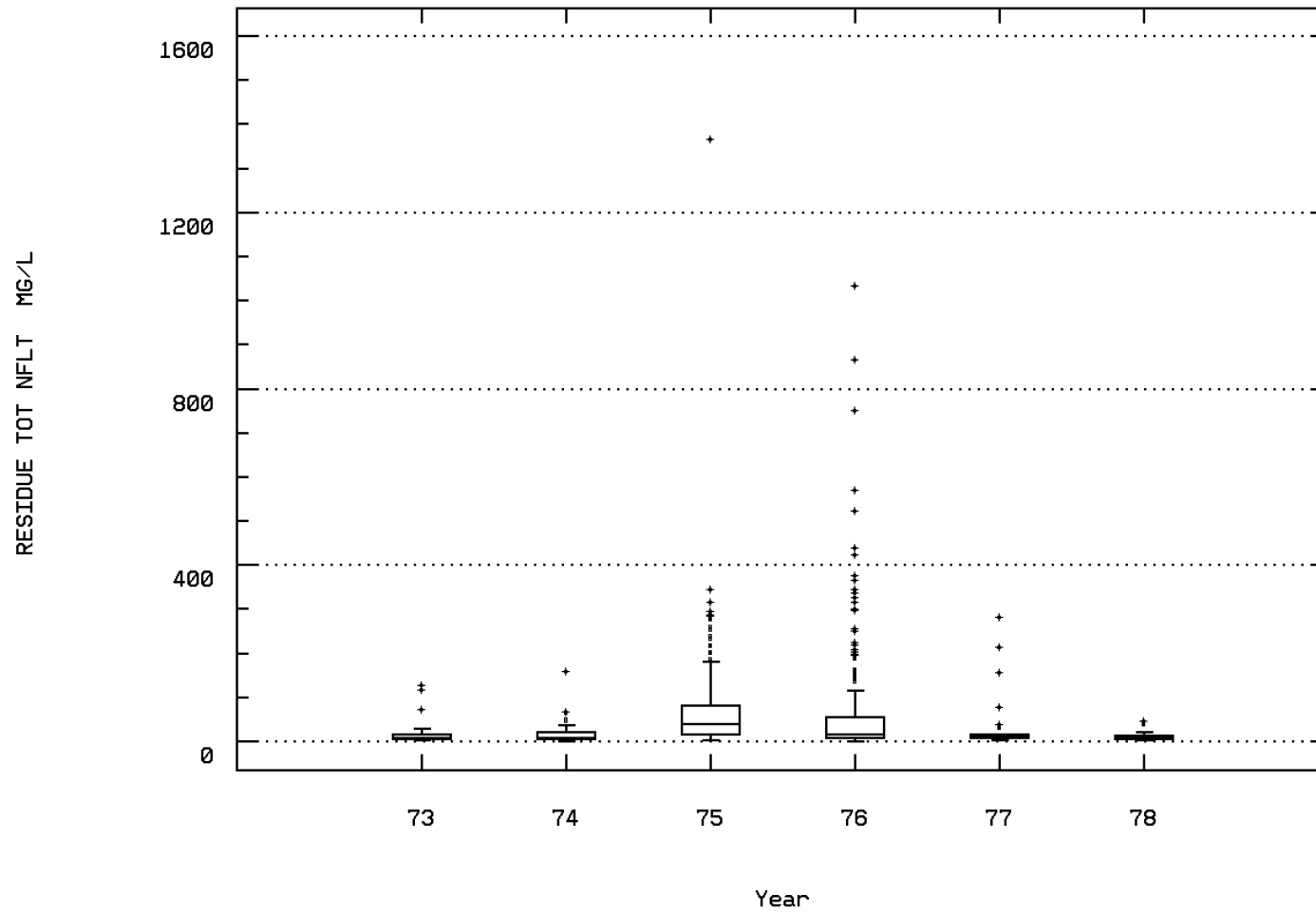
ALKALINITY, TOTAL (MG/L AS CaCO3)



CUB RUN NEAR BULL RUN

Station: MANA0035 Parameter Code: 00530

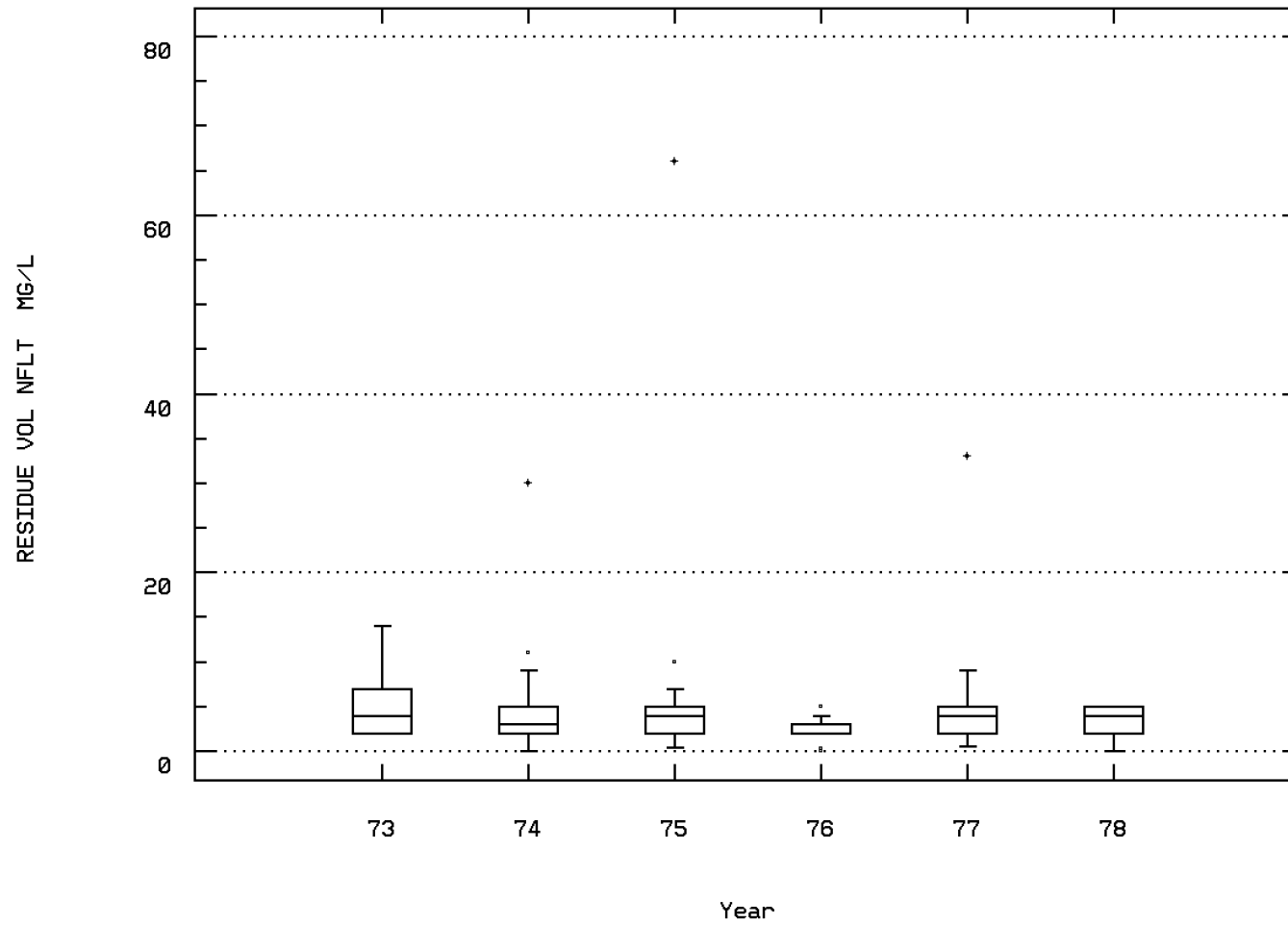
RESIDUE, TOTAL NONFILTRABLE (MG/L)



CUB RUN NEAR BULL RUN

Station: MANA0035 Parameter Code: 00535

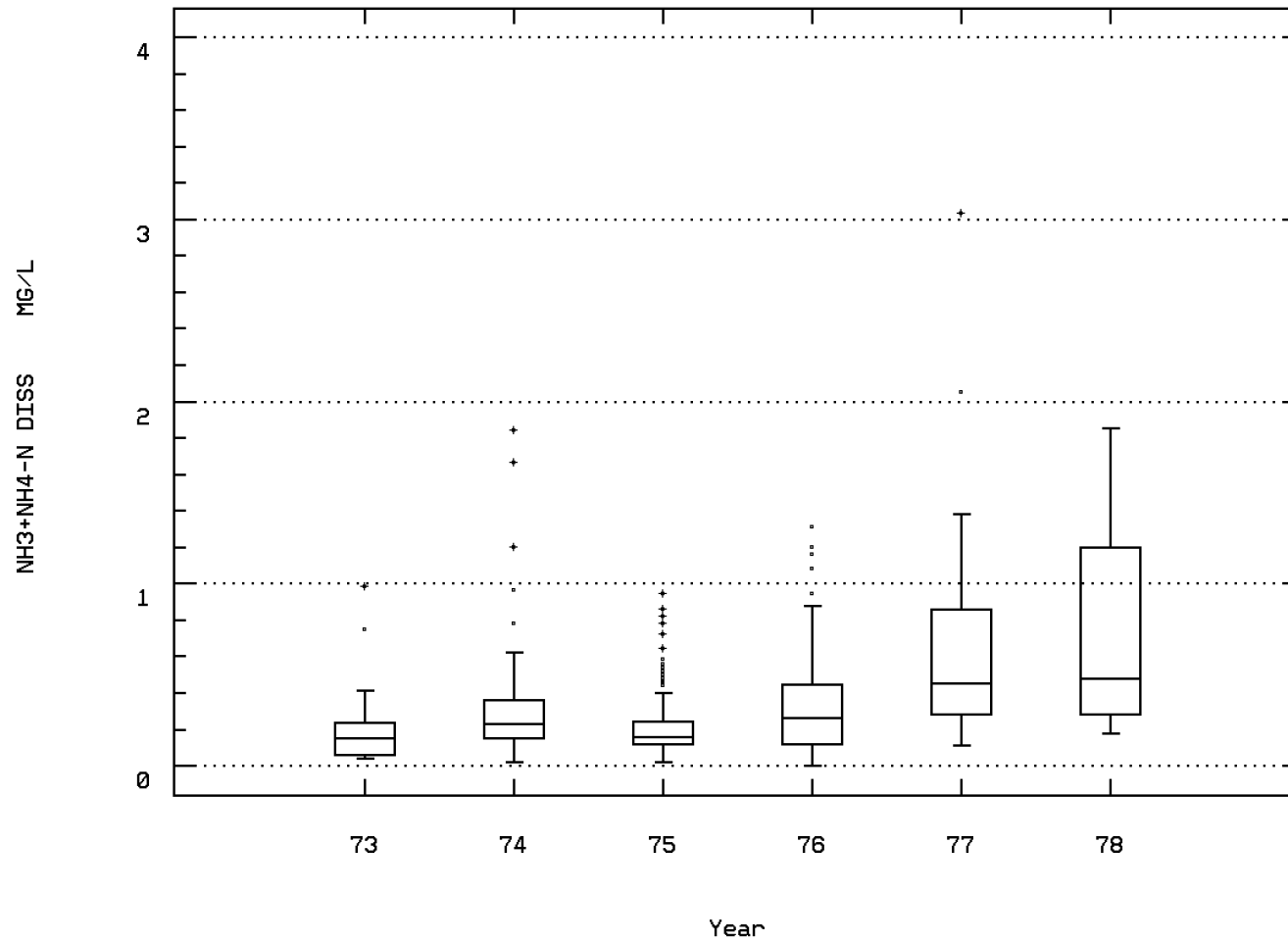
RESIDUE, VOLATILE NONFILTRABLE (MG/L)



CUB RUN NEAR BULL RUN

Station: MANA0035 Parameter Code: 00608

NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)

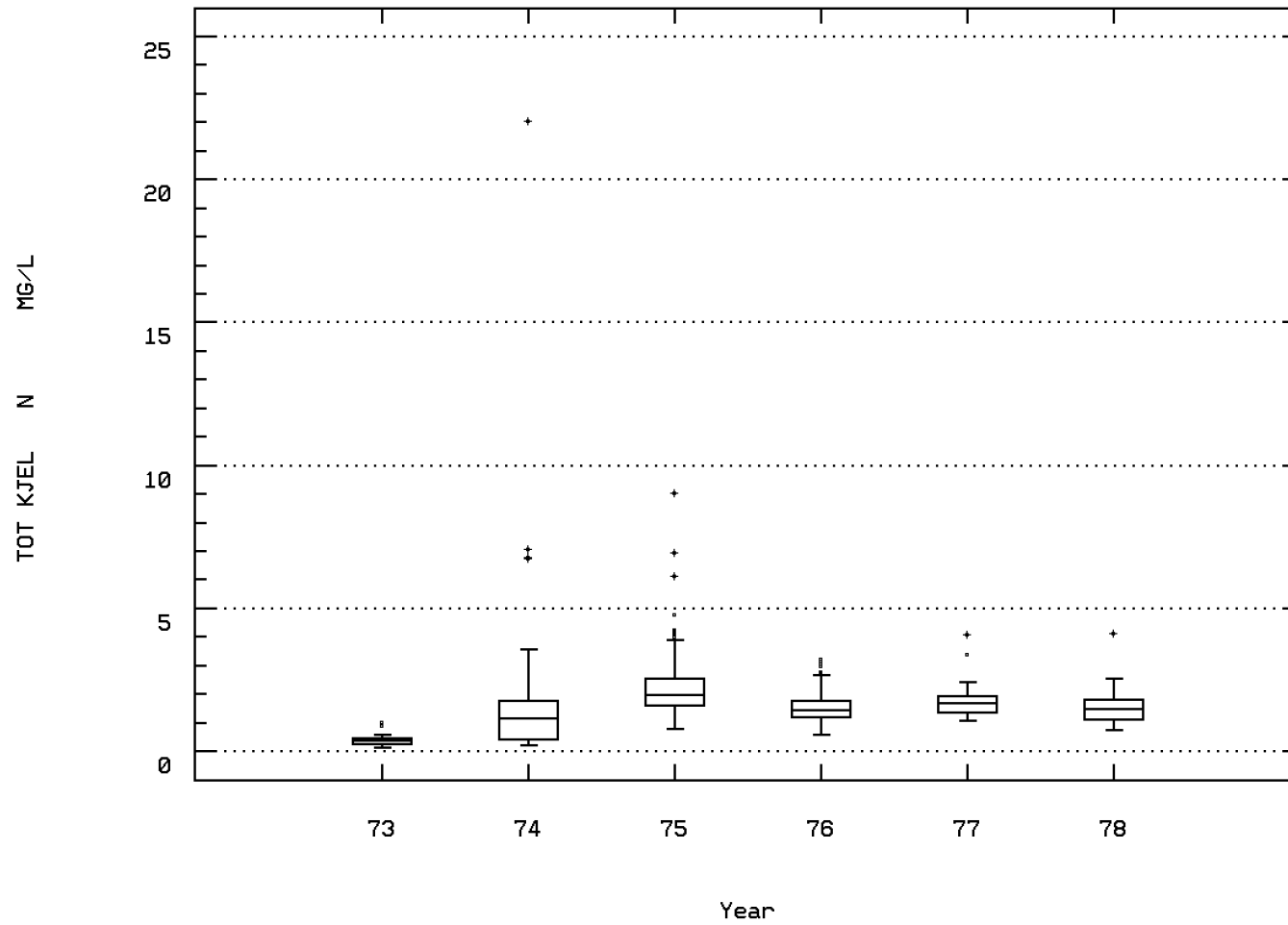


CUB RUN NEAR BULL RUN



Station: MANA0035 Parameter Code: 00625

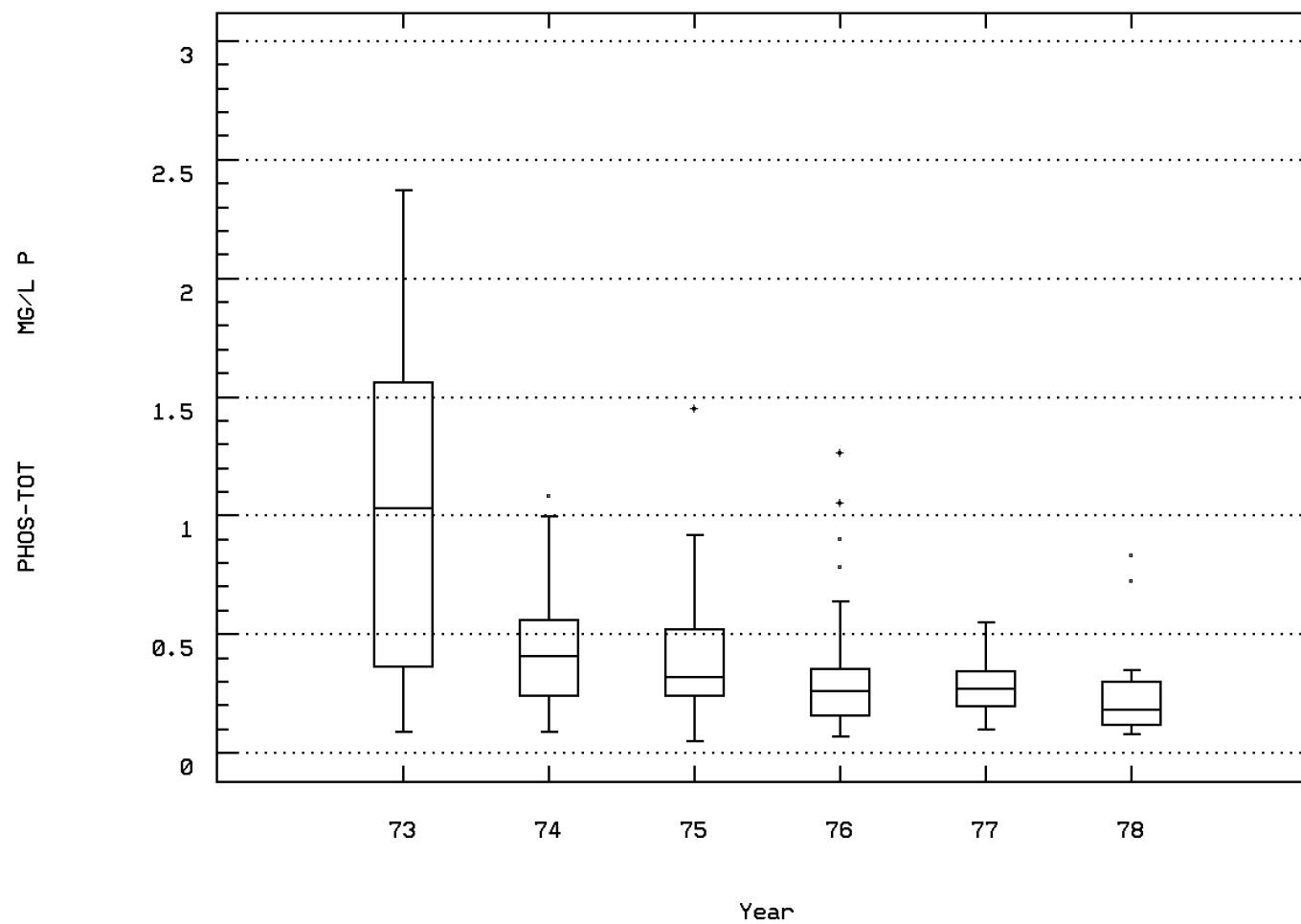
NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)



CUB RUN NEAR BULL RUN

Station: MANA0035 Parameter Code: 00665

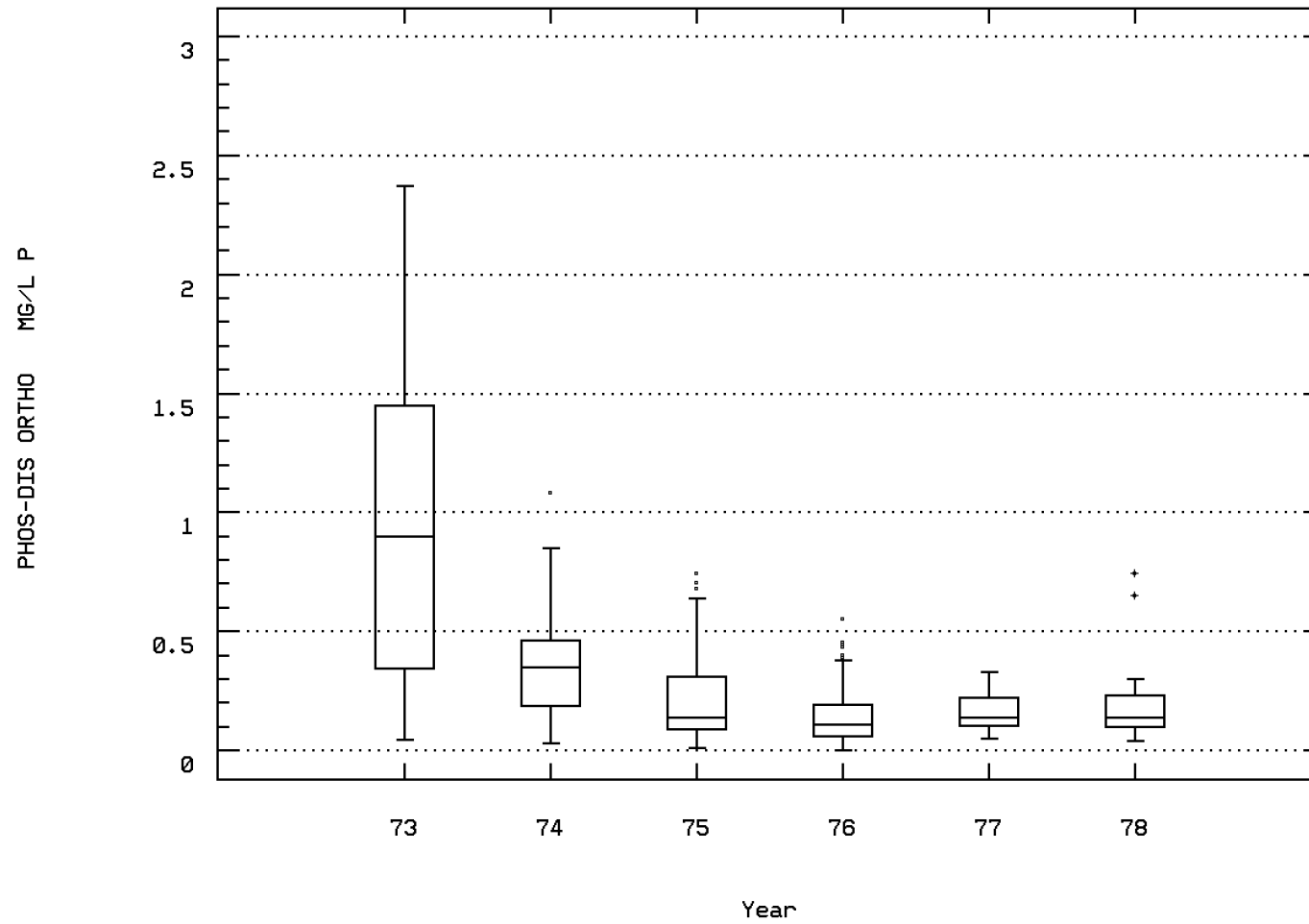
PHOSPHORUS, TOTAL (MG/L AS P)



CUB RUN NEAR BULL RUN

Station: MANA0035 Parameter Code: 00671

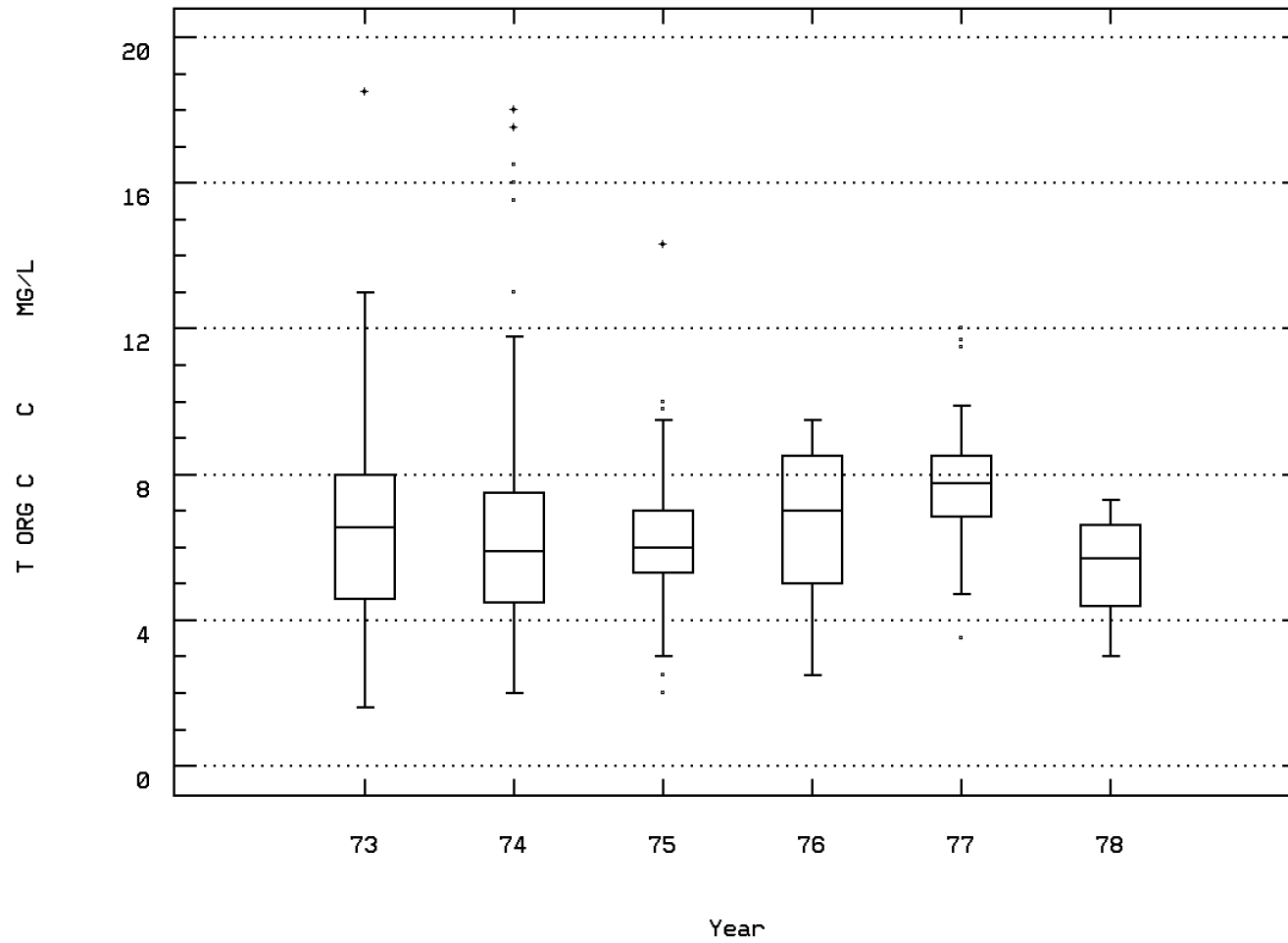
PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (M



CUB RUN NEAR BULL RUN

Station: MANA0035 Parameter Code: 00680

CARBON, TOTAL ORGANIC (MG/L AS C)



CUB RUN NEAR BULL RUN

## Station Inventory for Station: MANA0036

NPS Station ID: MANA0036  
 Location: BULL RUN NEAR CATHARPIN, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin:  
 Minor Basin:  
 RF1 Index: 02070010  
 RF3 Index: 02070010005701.89  
 Description:

LAT/LON: 38.889171/ -77.570559

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 2.84

Agency: 112WRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): 01656725  
 Within Park Boundary: No

Date Created: / /

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.30  
 Distance from RF3: 0.02

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0036

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-08/24/94	95	15.	14.111	28.	0.	63.2	7.95	3.5	6.	21.	24.4
00025 BAROMETRIC PRESSURE (MM OF HG)	08/24/94-08/24/94	1	763.	763.	763.	763.	0.	0.	**	**	**	**
00061 FLOW, STREAM, INSTANTANEOUS CFS	08/24/94-08/24/94	1	8.	8.	8.	8.	0.	0.	**	**	**	**
00065 STAGE, STREAM (FEET)	05/16/74-08/24/94	41	1.46	1.582	3.99	1.24	0.224	0.473	1.272	1.355	1.64	2.
00080 COLOR (PLATINUM-COBALT UNITS)	08/29/79-08/29/79	1	30.	30.	30.	30.	0.	0.	**	**	**	**
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	06/17/74-08/24/94	6	128.5	126.	138.	101.	173.6	13.176	**	**	**	**
00300p OXYGEN, DISSOLVED MG/L	02/06/73-08/24/94	95	10.2	10.285	14.4	5.3	4.291	2.071	7.3	9.	12.	13.14
00310 BOD, 5 DAY, 20 DEG C MG/L	01/07/74-11/19/74	18	1.1	1.272	3.	0.2	0.761	0.872	0.29	0.6	1.7	2.91
00400p PH (STANDARD UNITS)	02/06/73-08/24/94	65	7.4	7.328	8.7	6.1	0.279	0.528	6.6	7.1	7.6	7.9
00400p CONVERTED PH (STANDARD UNITS)	02/06/73-08/24/94	65	7.4	7.004	8.7	6.1	0.386	0.621	6.6	7.1	7.6	7.9
00400p MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-08/24/94	65	0.04	0.099	0.794	0.002	0.024	0.156	0.013	0.025	0.079	0.251
00403 PH, LAB, STANDARD UNITS SU	08/24/94-08/24/94	1	7.	7.	7.	7.	0.	0.	**	**	**	**
00403 CONVERTED PH, LAB, STANDARD UNITS	08/24/94-08/24/94	1	7.	7.	7.	7.	0.	0.	**	**	**	**
00403 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	08/24/94-08/24/94	1	0.1	0.1	0.1	0.1	0.	0.	**	**	**	**
00405 CARBON DIOXIDE (MG/L AS CO2)	08/29/79-08/29/79	1	18.	18.	18.	18.	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	02/06/73-08/29/79	90	39.	39.	61.	12.	125.753	11.214	24.	29.	49.	53.
00430 ALKALINITY, CARBONATE (MG/L AS CaCO3)	02/06/73-07/08/74	21	0.	0.619	13.	0.	8.048	2.837	0.	0.	0.	0.
00440 BICARBONATE ION (MG/L AS HCO3)	08/29/79-08/29/79	1	45.	45.	45.	45.	0.	0.	**	**	**	**
00445 CARBONATE ION (MG/L AS CO3)	08/29/79-08/29/79	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00453 BICARBONATE, WATER, DISS, INCR TIT, FIELD, AS HCO3, MG/L	08/24/94-08/24/94	1	49.	49.	49.	49.	0.	0.	**	**	**	**
00515 RESIDUE, TOTAL FILTRABLE (DRIED AT 105C), MG/L	02/06/73-12/30/74	96	6.	8.26	93.	0.	194.742	13.955	1.	2.25	8.	14.
00520 RESIDUE, VOLATILE FILTRABLE (MG/L)	02/06/73-12/30/74	95	3.	3.168	16.	0.	8.078	2.842	1.	1.	4.	6.4
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	12/03/73-12/03/73	1	2.	2.	2.	2.	0.	0.	**	**	**	**
00605 NITROGEN, ORGANIC, TOTAL (MG/L AS N)	02/13/73-08/27/73	18	0.145	0.215	0.995	0.01	0.052	0.229	0.055	0.085	0.245	0.541
00607 NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)	12/02/74-12/09/74	2	0.58	0.58	0.93	0.23	0.245	0.495	**	**	**	**
00608p NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	09/04/73-08/24/94	68	0.024	0.04	0.168	0.001	0.002	0.041	0.005	0.009	0.06	0.104
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	02/13/73-08/27/73	18	0.021	0.043	0.158	0.004	0.003	0.053	0.005	0.006	0.052	0.154
00613p NITRITE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-08/24/94	70	0.008	0.012	0.055	0.001	0.	0.011	0.005	0.005	0.014	0.03
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	28 ##	0.005	0.005	0.013	0.002	0.	0.002	0.003	0.005	0.005	0.008
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-08/29/79	68	0.22	0.315	1.66	0.	0.096	0.31	0.02	0.063	0.528	0.733
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	02/06/73-08/27/73	28	0.3	0.347	0.778	0.1	0.036	0.188	0.151	0.203	0.494	0.628
00623 NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	12/02/74-08/24/94	3	0.29	0.52	1.07	0.2	0.229	0.478	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	06/06/73-12/30/74	80	0.226	1.28	66.	0.025	54.112	7.356	0.075	0.126	0.51	1.275
00631 NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/29/79-08/24/94	2	0.35	0.35	0.4	0.3	0.005	0.071	**	**	**	**
00660 PHOSPHATE, ORTHO (MG/L AS PO4)	02/20/73-08/29/79	95	0.03	0.054	0.41	0.	0.005	0.074	0.	0.02	0.06	0.102
00665 PHOSPHORUS, TOTAL (MG/L AS P)	03/06/73-12/30/74	91	0.038	0.062	0.4	0.005	0.005	0.073	0.012	0.02	0.075	0.131
00666 PHOSPHORUS, DISSOLVED (MG/L AS P)	08/24/94-08/24/94	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
00671p PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-08/24/94	96	0.01	0.018	0.135	0.001	0.001	0.023	0.005	0.006	0.02	0.033

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

# Parameter Inventory for Station: MANA0036

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00673 PHOSPHORUS, DISSOLVED ORGANIC (MG/L AS P)	12/02/74-12/09/74	2	0.045	0.045	0.07	0.02	0.001	0.035	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	02/06/73-12/30/74	95	3.6	4.473	16.2	0.8	8.172	2.859	1.8	2.5	6.	8.7
00691 CARBON, DISSOLVED INORGANIC (MG/L AS C)	06/06/73-06/20/73	3	7.6	7.533	9.	6.	2.253	1.501	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	08/29/79-08/29/79	1	54.	54.	54.	54.	0.	0.	**	**	**	**
00902 HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/29/79-08/29/79	1	17.	17.	17.	17.	0.	0.	**	**	**	**
00915 CALCIUM, DISSOLVED (MG/L AS Ca)	08/29/79-08/24/94	2	13.5	13.5	14.	13.	0.5	0.707	**	**	**	**
00925 MAGNESIUM, DISSOLVED (MG/L AS MG)	08/29/79-08/24/94	2	4.65	4.65	4.7	4.6	0.005	0.071	**	**	**	**
00930 SODIUM, DISSOLVED (MG/L AS Na)	08/29/79-08/24/94	2	4.95	4.95	5.3	4.6	0.245	0.495	**	**	**	**
00931 SODIUM ADSORPTION RATIO	08/29/79-08/29/79	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00932 SODIUM, PERCENT	08/29/79-08/29/79	1	15.	15.	15.	15.	0.	0.	**	**	**	**
00933 SODIUM,PLUS POTASSIUM (MG/L)	08/29/79-08/29/79	1	6.6	6.6	6.6	6.6	0.	0.	**	**	**	**
00935 POTASSIUM, DISSOLVED (MG/L AS K)	08/29/79-08/24/94	2	2.1	2.1	2.2	2.	0.02	0.141	**	**	**	**
00940 CHLORIDE,TOTAL IN WATER MG/L	08/29/79-08/24/94	2	6.	6.	7.	5.	2.	1.414	**	**	**	**
00945 SULFATE, TOTAL (MG/L AS SO4)	08/29/79-08/24/94	2	12.	12.	12.	12.	0.	0.	**	**	**	**
00950 FLUORIDE, DISSOLVED (MG/L AS F)	08/29/79-08/24/94	2	0.15	0.15	0.2	0.1	0.005	0.071	**	**	**	**
00955 SILICA, DISSOLVED (MG/L AS SiO2)	08/29/79-08/24/94	2	15.	15.	16.	14.	2.	1.414	**	**	**	**
01046 IRON, DISSOLVED (UG/L AS FE)	08/29/79-08/24/94	2	220.	220.	260.	180.	3200.	56.569	**	**	**	**
01056 MANGANESE, DISSOLVED (UG/L AS MN)	08/24/94-08/24/94	1	18.	18.	18.	18.	0.	0.	**	**	**	**
04024 PROPACHLOR,DISSOLVED,WATER,TOTAL RECOVERABLE UG/L	08/24/94-08/24/94	1 ##	0.008	0.008	0.008	0.008	0.	0.	**	**	**	**
04028 BUTYLATE, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	08/24/94-08/24/94	1 ##	0.004	0.004	0.004	0.004	0.	0.	**	**	**	**
04035 SIMAZINE, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	08/24/94-08/24/94	1	0.007	0.007	0.007	0.007	0.	0.	**	**	**	**
04037 PROMETON, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	08/24/94-08/24/94	1	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
04040 DEETHYL ATRAZINE,DISSOLVED,WATER,TOT REC UG/L	08/24/94-08/24/94	1	0.012	0.012	0.012	0.012	0.	0.	**	**	**	**
04041 CYANAZINE,DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	08/24/94-08/24/94	1 ##	0.007	0.007	0.007	0.007	0.	0.	**	**	**	**
04095 FONOFOS, DISSOLVED, WATER, TOTAL RECOVERABLE UG/L	08/24/94-08/24/94	1 ##	0.004	0.004	0.004	0.004	0.	0.	**	**	**	**
31501 COLIFORM,TOT, MEMBRANE FILTER,IMMED.M-ENDO MED,35C	11/26/73-04/16/74	6	1429.	2480.667	7600.	700.	6743306.267	2596.788	**	**	**	**
31501 LOG COLIFORM,TOT, MEMBRANE FILTER,IMMED.M-ENDO MED,	11/26/73-04/16/74	6	3.154	3.247	3.881	2.845	0.134	0.365	**	**	**	**
31501 GM COLIFORM,TOT, MEMBRANE FILTER,IMMED.M-ENDO MED,3	GEOMETRIC MEAN =			1765.244								
31505 COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506)	03/13/73-05/13/74	5	930.	3478.	11000.	430.	20728070.	4552.809	**	**	**	**
31505 LOG COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 3150	03/13/73-05/13/74	5	2.968	3.188	4.041	2.633	0.404	0.636	**	**	**	**
31505 GM COLIFORM,TOT,MPN,CONFIRMED TEST,35C (TUBE 31506	GEOMETRIC MEAN =			1541.395								
31615 FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	03/13/73-12/02/74	11	430.	1712.727	11000.	0.	10240241.818	3200.038	8.	70.	2400.	9280.
31615 LOG FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	03/13/73-12/02/74	11	2.633	2.525	4.041	0.	1.191	1.091	0.32	1.845	3.38	3.909
31615 GM FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	GEOMETRIC MEAN =			334.972								
31616 FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/03/73-06/24/74	8	163.5	874.25	3355.	10.	1684808.5	1298.002	**	**	**	**
31616 LOG FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	12/03/73-06/24/74	8	2.184	2.302	3.526	1.	0.819	0.905	**	**	**	**
31616 GM FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	GEOMETRIC MEAN =			200.503								
31678 FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATION	06/20/73-07/23/73	2	1415.	1415.	2400.	430.	1940450.	1393.	**	**	**	**
31678 LOG FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATI	06/20/73-07/23/73	2	3.007	3.007	3.38	2.633	0.279	0.528	**	**	**	**
31678 GM FECAL STREPTOCOCCI,MPN,AD-EVA,TUBE CONFIGURATIO	GEOMETRIC MEAN =			1015.874								
31679 FECAL STREPTOCOCCI,MF M-ENTEROCOCCUS AGAR,35C,48H	12/03/73-04/16/74	7	35.	132.571	504.	15.	31333.619	177.013	**	**	**	**
31679 LOG FECAL STREPTOCOCCI,MF M-ENTEROCOCCUS AGAR,35C,	12/03/73-04/16/74	7	1.544	1.819	2.702	1.176	0.298	0.546	**	**	**	**
31679 GM FECAL STREPTOCOCCI,MF M-ENTEROCOCCUS AGAR,35C,4	GEOMETRIC MEAN =			65.927								
34253 A-BHC-ALPHA DISSUG/L	08/24/94-08/24/94	1 ##	0.004	0.004	0.004	0.004	0.	0.	**	**	**	**
34653 P,P'-DDE DISSUG/L	08/24/94-08/24/94	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
38933 CHLORPYRIFOS,DISSOLVED UG/L	08/24/94-08/24/94	1	0.02	0.02	0.02	0.02	0.	0.	**	**	**	**
39086 ALKALINITY,WATER,DISS,INCR TIT,FIELD,AS CaCO3,MG/L	08/24/94-08/24/94	1	40.	40.	40.	40.	0.	0.	**	**	**	**
39341 GAMMA-BHC(LINDANE),DISSOLVED,UG/L	08/24/94-08/24/94	1 ##	0.006	0.006	0.006	0.006	0.	0.	**	**	**	**
39381 DIELDRIN IN FILT. FRAC. OF WATER SAMPLE (UG/L)	08/24/94-08/24/94	1 ##	0.004	0.004	0.004	0.004	0.	0.	**	**	**	**
39415 METOLACHLOR, WATER, DISSOLVED UG/L	08/24/94-08/24/94	1	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
39532 MALATHION IN FILT. FRAC. OF WATER SAMPLE (UG/L)	08/24/94-08/24/94	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39542 PARATHION IN FILT. FRAC. OF WATER SAMPLE (UG/L)	08/24/94-08/24/94	1 ##	0.011	0.011	0.011	0.011	0.	0.	**	**	**	**
39572 DIAZINON IN FILT. FRAC. OF WATER SAMPLE (UG/L)	08/24/94-08/24/94	1 ##	0.004	0.004	0.004	0.004	0.	0.	**	**	**	**
39632 ATRAZINE DISSOLVED IN WATER PPB	08/24/94-08/24/94	1	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
46342 ALACHLOR (LASSO), WATER, DISSOLVED UG/L	08/24/94-08/24/94	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
70300 RESIDUE,TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/29/79-08/24/94	2	89.5	89.5	94.	85.	40.5	6.364	**	**	**	**
70301 SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/29/79-08/29/79	1	82.	82.	82.	82.	0.	0.	**	**	**	**
70303 SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/29/79-08/29/79	1	0.13	0.13	0.13	0.13	0.	0.	**	**	**	**
71846 NITROGEN, AMMONIA, DISSOLVED (MG/L AS NH4)	09/04/73-12/30/74	67	0.03	0.051	0.22	0.	0.003	0.053	0.	0.01	0.08	0.134
71851 NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	09/04/73-08/29/79	68	1.	1.388	7.3	0.	1.86	1.364	0.1	0.3	2.3	3.22
71856 NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	09/04/73-08/29/79	69	0.03	0.033	0.18	0.	0.002	0.042	0.	0.	0.05	0.1
80154 SUSP. SEDIMENT CONCENTRATION-EVAP. AT 110C (MG/L)	08/24/94-08/24/94	1	3.	3.	3.	3.	0.	0.	**	**	**	**
82630 METRIBUZIN (SENCOR), WATER, DISSOLVED UG/L	08/24/94-08/24/94	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0036

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th	
82660	DIETHYLANILINE, 2, 6- 0.7UM FILT,TOT RECV,WTR UG/L	08/24/94-08/24/94	1 ###	0.003	0.003	0.003	0.003	0.	0.	**	**	**	**
82661	TRIFLURALINE, 0.7UM FILT,TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
82662	DIMETHOATE, 0.7 UM FILT,TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
82663	ETHALFLURALIN, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
82664	PHORATE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
82665	TERBACIL, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.015	0.015	0.015	0.015	0.	0.	**	**	**	**
82666	LINURON, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.02	0.02	0.02	0.02	0.	0.	**	**	**	**
82667	METHYL PARATHION,0.7 UM FILT,TOT RECV,WATER UG/L	08/24/94-08/24/94	1 ###	0.02	0.02	0.02	0.02	0.	0.	**	**	**	**
82668	EPTC, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.003	0.003	0.003	0.003	0.	0.	**	**	**	**
82669	PEBULATE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
82670	TEBUTHIURON, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
82671	MOLINATE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.004	0.004	0.004	0.004	0.	0.	**	**	**	**
82672	ETHOPROP, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
82673	BENFLURALIN, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
82674	CARBOFURAN, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
82675	TERBUFOS, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
82676	PRONAMIDE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
82677	DISULFOTON, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.004	0.004	0.004	0.004	0.	0.	**	**	**	**
82678	TRIALATE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.004	0.004	0.004	0.004	0.	0.	**	**	**	**
82679	PROPANIL, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
82680	CARBARYL, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.025	0.025	0.025	0.025	0.	0.	**	**	**	**
82681	THIOBENCARB, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.004	0.004	0.004	0.004	0.	0.	**	**	**	**
82682	DCPA, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.002	0.002	0.002	0.002	0.	0.	**	**	**	**
82683	PENDIMETHALIN, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
82684	NAPROPAMIDE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
82685	PROPARGITE, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.003	0.003	0.003	0.003	0.	0.	**	**	**	**
82686	METHYL AZINPHOS, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.02	0.02	0.02	0.02	0.	0.	**	**	**	**
82687	PERMETHRIN, CIS, 0.7 UM FILT, TOT RECV, WATER UG/L	08/24/94-08/24/94	1 ###	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0036

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300	OXYGEN, DISSOLVED	Other-Lo Lim.	4.	95	0	0.00	39	0	0.00	32	0	0.00	24	0	0.00		
00400	PH	Other-Hi Lim.	9.	65	0	0.00	21	0	0.00	23	0	0.00	21	0	0.00		
		Other-Lo Lim.	6.5	65	4	0.06	21	1	0.05	23	3	0.13	21	0	0.00		
00403	PH, LAB	Other-Hi Lim.	9.	1	0	0.00							1	0	0.00		
		Other-Lo Lim.	6.5	1	0	0.00							1	0	0.00		
00613	NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	70	0	0.00	36	0	0.00	17	0	0.00	17	0	0.00		
00615	NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	28	0	0.00	6	0	0.00	15	0	0.00	7	0	0.00		
00618	NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	68	0	0.00	36	0	0.00	17	0	0.00	15	0	0.00		
00620	NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	28	0	0.00	6	0	0.00	15	0	0.00	7	0	0.00		
00631	NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	2	0	0.00							2	0	0.00		
00940	CHLORIDE, TOTAL IN WATER	Fresh Acute	860.	2	0	0.00							2	0	0.00		
		Drinking Water	250.	2	0	0.00							2	0	0.00		
00945	SULFATE, TOTAL (AS SO4)	Drinking Water	250.	2	0	0.00							2	0	0.00		
00950	FLUORIDE, DISSOLVED AS F	Drinking Water	4.	2	0	0.00							2	0	0.00		
04035	SIMAZINE, DISSOLVED, WATER, TOTAL RECOVER	Drinking Water	4.	1	0	0.00							1	0	0.00		
31501	COLIFORM, TOTAL, MEMBRANE FILTER, IMMEDIATE	Other-Hi Lim.	1000.	6	5	0.83	5	4	0.80	1	1	1.00					
31505	COLIFORM, TOTAL, MPN, CONF. TEST, 35C	Other-Hi Lim.	1000.	5	2	0.40	1	0	0.00	3	1	0.33	1	1	1.00		
31615	FECAL COLIFORM, MPN	Other-Hi Lim.	200.	11	8	0.73	3	3	1.00	4	4	1.00	4	1	0.25		
31616	FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	8	4	0.50	5	3	0.60	3	1	0.33					
34653	P,P'-DDE, DISSOLVED	Fresh Acute	1050.	1	0	0.00							1	0	0.00		
38933	CHLORPYRIFOS, DISSOLVED	Fresh Acute	0.083	1	0	0.00							1	0	0.00		
39341	GAMMA-BHC(LINDANE), DISSOLVED	Fresh Acute	2.	1	0	0.00							1	0	0.00		
		Drinking Water	0.2	1	0	0.00							1	0	0.00		
39381	DIELDRIN IN FILT. FRAC. OF WATER SAMPLE	Fresh Acute	2.5	1	0	0.00							1	0	0.00		
39542	PARATHION IN FILT. FRAC. OF WATER SAMPLE	Fresh Acute	0.065	1	0	0.00							1	0	0.00		

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### EPA Water Quality Criteria Analysis for Station: MANA0036

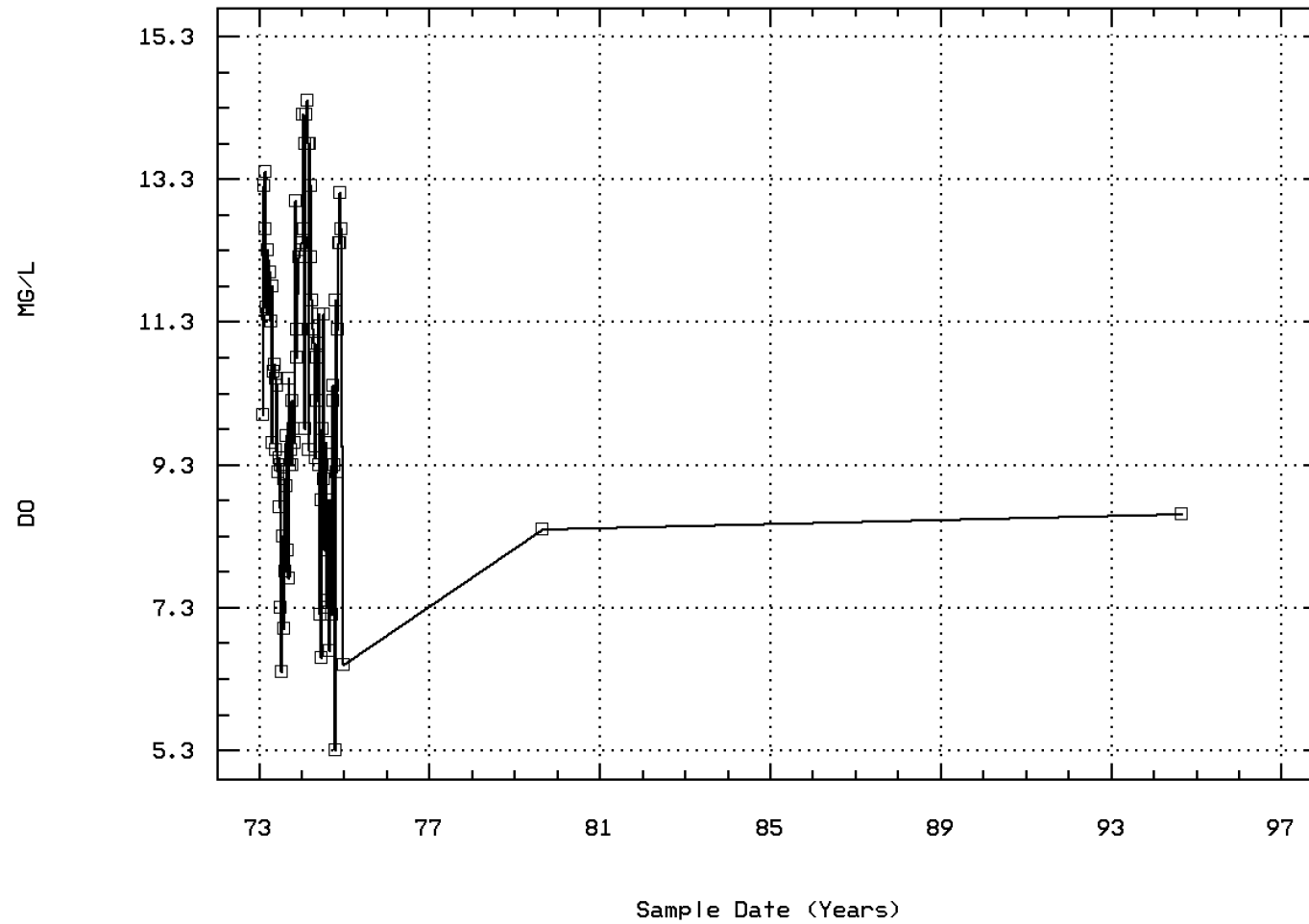
Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
39632 ATRAZINE DISSOLVED IN WATER	Drinking Water	3.	1	0	0.00							1	0	0.00			
46342 ALACHLOR (LASSO), WATER, DISSOLVED	Drinking Water	2.	1	0	0.00							1	0	0.00			
71851 NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	68	0	0.00	36	0	0.00	17	0	0.00	15	0	0.00			
71856 NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	69	0	0.00	36	0	0.00	17	0	0.00	16	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter



Station: MANA0036 Parameter Code: 00300

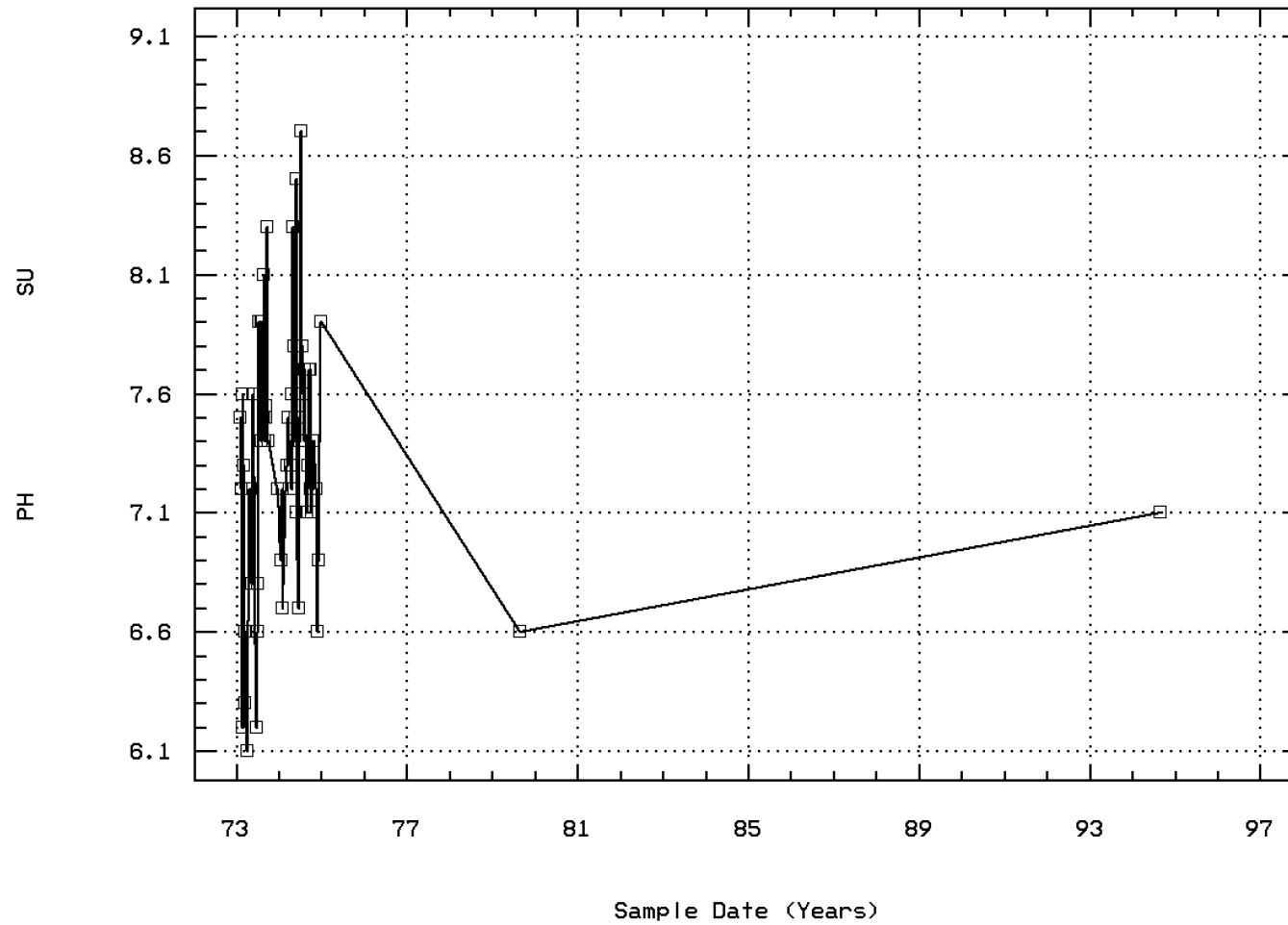
OXYGEN, DISSOLVED



BULL RUN NEAR CATHARPIN, VA

Station: MANA0036 Parameter Code: 00400

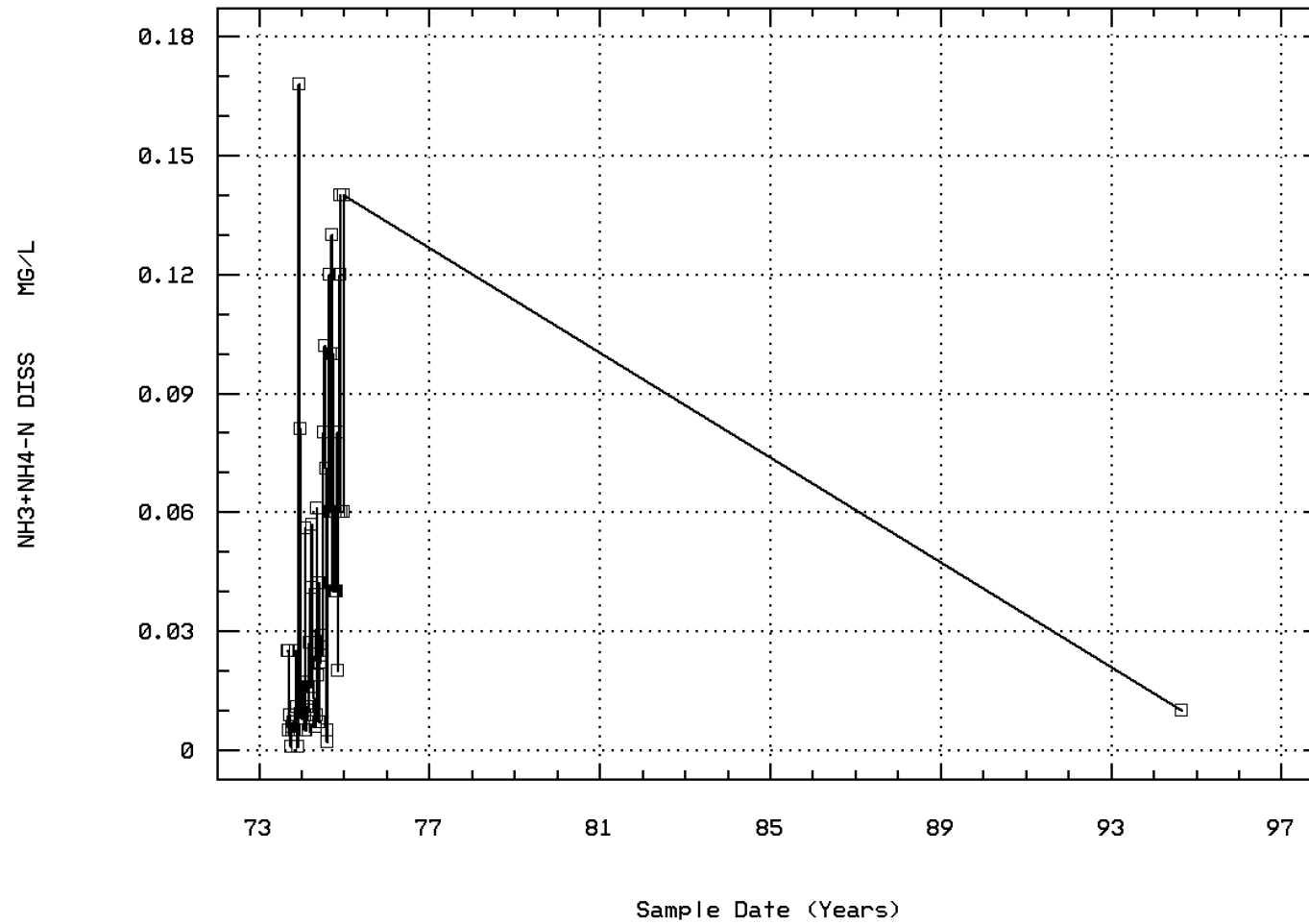
PH (STANDARD UNITS)



BULL RUN NEAR CATHARPIN, VA

Station: MANA0036 Parameter Code: 00608

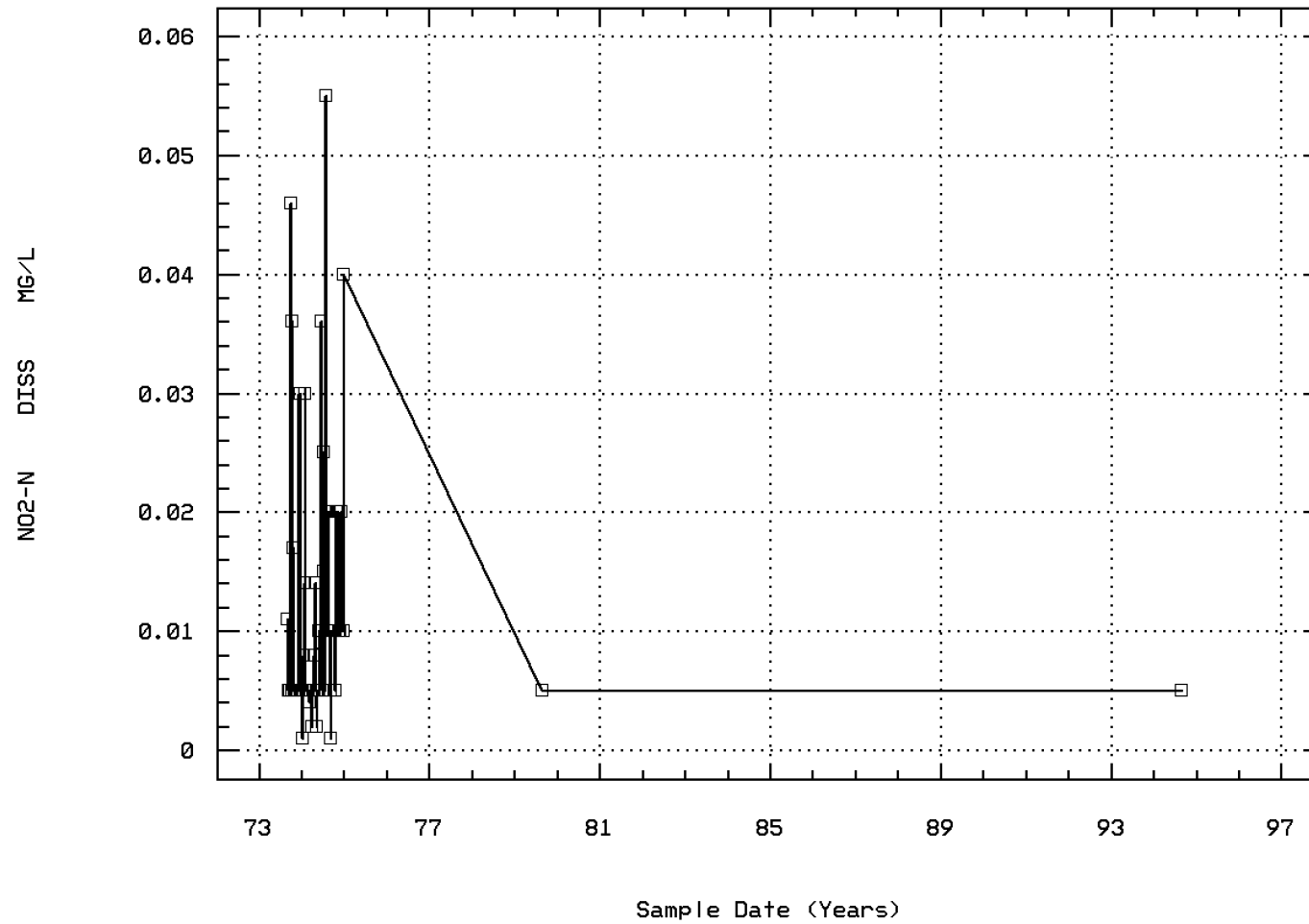
NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)



BULL RUN NEAR CATHARPIN, VA

Station: MANA0036 Parameter Code: 00613

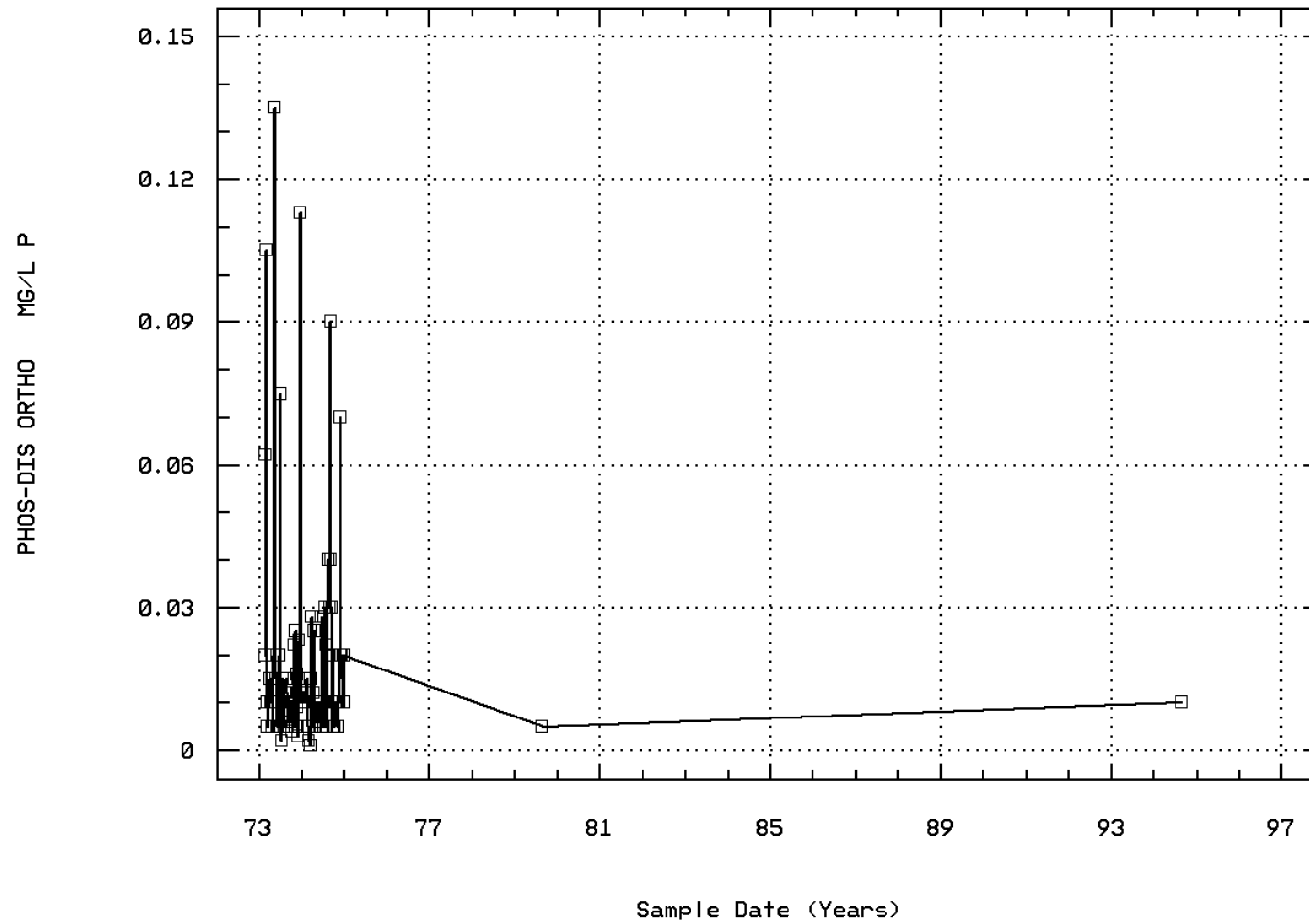
NITRITE NITROGEN, DISSOLVED (MG/L AS N)



BULL RUN NEAR CATHARPIN, VA

Station: MANA0036 Parameter Code: 00671

PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (M



BULL RUN NEAR CATHARPIN, VA

### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0036

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-08/24/94	39	6.	7.372	18.	0.	24.869	4.987	1.	3.5	10.5	16.
00300	OXYGEN, DISSOLVED MG/L	02/06/73-08/24/94	39	12.2	11.479	14.4	5.3	4.277	2.068	9.3	9.8	13.	13.8
00400	PH (STANDARD UNITS)	02/06/73-08/24/94	21	7.2	7.167	7.9	6.2	0.163	0.404	6.6	6.9	7.4	7.68
00400	CONVERTED PH (STANDARD UNITS)	02/06/73-08/24/94	21	7.2	6.963	7.9	6.2	0.207	0.455	6.6	6.9	7.4	7.68
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-08/24/94	21	0.063	0.109	0.631	0.013	0.019	0.139	0.021	0.04	0.126	0.251
00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-08/24/94	36	0.01	0.013	0.046	0.001	0.	0.012	0.005	0.005	0.02	0.032
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-08/24/94	40	0.01	0.019	0.113	0.002	0.001	0.025	0.005	0.007	0.02	0.058

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0036

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-08/24/94	32	16.75	16.391	28.	4.	42.125	6.49	6.15	12.	21.	25.7
00300	OXYGEN, DISSOLVED MG/L	02/06/73-08/24/94	32	10.45	10.247	13.2	6.6	2.318	1.523	7.72	9.325	11.375	12.14
00400	PH (STANDARD UNITS)	02/06/73-08/24/94	23	7.3	7.274	8.7	6.1	0.456	0.675	6.24	6.8	7.6	8.42
00400	CONVERTED PH (STANDARD UNITS)	02/06/73-08/24/94	23	7.3	6.848	8.7	6.1	0.645	0.803	6.24	6.8	7.6	8.42
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-08/24/94	23	0.05	0.142	0.794	0.002	0.045	0.213	0.004	0.025	0.158	0.579
00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-08/24/94	17	0.005	0.009	0.036	0.002	0.	0.009	0.002	0.005	0.01	0.027
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-08/24/94	32	0.01	0.017	0.135	0.001	0.001	0.025	0.005	0.005	0.019	0.028

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0036

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	02/06/73-08/24/94	24	22.75	22.021	26.	11.	10.902	3.302	18.	20.25	24.	25.5
00300	OXYGEN, DISSOLVED MG/L	02/06/73-08/24/94	24	8.35	8.396	10.5	6.4	1.201	1.096	6.85	7.475	9.1	10.05
00400	PH (STANDARD UNITS)	02/06/73-08/24/94	21	7.55	7.55	8.3	6.6	0.146	0.381	7.1	7.35	7.85	8.06
00400	CONVERTED PH (STANDARD UNITS)	02/06/73-08/24/94	21	7.55	7.372	8.3	6.6	0.179	0.423	7.1	7.35	7.85	8.06
00400	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	02/06/73-08/24/94	21	0.028	0.042	0.251	0.005	0.003	0.052	0.009	0.014	0.045	0.079
00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	09/04/73-08/24/94	17	0.01	0.012	0.055	0.001	0.	0.012	0.004	0.005	0.013	0.027
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	02/20/73-08/24/94	24	0.011	0.018	0.09	0.002	0.	0.019	0.005	0.005	0.028	0.04

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

## Station Inventory for Station: MANA0037

NPS Station ID: MANA0037  
 Location: ROUTE 705  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: 02-NORTH-ATLANTIC  
 Minor Basin: 1-POTOMAC-SHENANDOAH  
 RF1 Index: 02070010055  
 RF3 Index: 02070010006400.00

LAT/LON: 38.889448/ -77.570559

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 5.280  
 RF3 Mile Point: 0.30

Description:

VIRGINIA STATE WATER CONTROL BOARD    AMBIENT MONITORING    BASIN: 1A POTOMAC  
 RIVER: BULL RUN    SECTION: 07A    TOPO MAP #: 0021    TOPO MAP NAME: ARCOLA, VA

Agency: 21VASWCB  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): 1ABUL025.94 /VA1A07AX0135/VA1A3X0135  
 Within Park Boundary: No

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.04

Date Created: 04/19/76

On/Off RF1: OFF  
 On/Off RF3:

### Parameter Inventory for Station: MANA0037

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/19/76-07/15/96	36	15.4	15.111	28.	1.3	61.595	7.848	4.02	8.675	23.2	25.66
00070 TURBIDITY, (JACKSON CANDLE UNITS)	09/25/90-04/07/92	7	4.4	21.086	110.	1.9	1557.281	39.462	**	**	**	**
00076 TURBIDITY,HACH TURBIDIMETER (FORMAZIN TURB UNIT)	08/24/94-07/15/96	8	6.8	7.25	16.7	2.9	20.511	4.529	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	04/17/91-01/06/93	8	37.5	45.875	122.	20.	1140.411	33.77	**	**	**	**
00094 SPECIFIC CONDUCTANCE,FIELD (UMHOS/CM @ 25C)	01/09/92-07/15/96	19	146.	154.474	248.	16.	2455.152	49.549	116.	129.	196.	210.
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/25/90-07/15/96	23	144.	156.478	289.	90.	2238.715	47.315	107.8	126.	181.	232.4
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	01/09/92-07/15/96	19	9.8	9.626	14.2	5.3	6.36	2.522	5.6	7.7	11.4	13.8
00300 OXYGEN, DISSOLVED MG/L	04/19/76-04/17/91	17	10.	9.935	13.1	7.6	2.502	1.582	7.76	8.45	11.4	11.9
00310 BOD, 5 DAY, 20 DEG C MG/L	09/25/90-07/15/96	23	1.	1.648	5.	0.5	1.604	1.267	0.5	1.	2.	4.
00340 COD, .25N K2CR2O7 MG/L	09/25/90-07/15/96	23	14.	16.043	37.	6.	64.862	8.054	7.8	10.	22.	29.6
00400 PH (STANDARD UNITS)	04/19/76-07/15/96	36	7.5	7.656	9.2	6.6	0.409	0.639	6.9	7.3	7.925	8.8
00400 CONVERTED PH (STANDARD UNITS)	04/19/76-07/15/96	36	7.5	7.342	9.2	6.6	0.51	0.714	6.9	7.3	7.925	8.8
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/19/76-07/15/96	36	0.032	0.045	0.251	0.001	0.003	0.054	0.002	0.012	0.05	0.126
00403 PH, LAB, STANDARD UNITS SU	09/25/90-07/15/96	23	7.2	7.239	8.1	6.5	0.188	0.434	6.64	6.9	7.6	7.86
00403 CONVERTED PH, LAB, STANDARD UNITS	09/25/90-07/15/96	23	7.2	7.054	8.1	6.5	0.224	0.473	6.64	6.9	7.6	7.86
00403 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	09/25/90-07/15/96	23	0.063	0.088	0.316	0.008	0.007	0.082	0.014	0.025	0.126	0.231
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	09/25/90-07/15/96	23	42.	47.739	112.	16.	606.929	24.636	20.6	27.	63.	84.8
00500 RESIDUE, TOTAL (MG/L)	08/17/76-07/15/96	24	114.5	115.708	179.	72.	795.085	28.197	75.	94.25	134.75	158.5
00505 RESIDUE, TOTAL VOLATILE (MG/L)	08/17/76-07/15/96	24	33.	32.167	60.	8.	151.014	12.289	11.5	23.5	41.5	46.
00510 RESIDUE, TOTAL FIXED (MG/L)	08/17/76-07/15/96	24	79.5	83.542	140.	47.	563.737	23.743	55.5	64.	98.25	122.
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	09/25/90-07/15/96	23	3.	8.478	121.	1.	605.647	24.61	1.5	1.5	5.	8.2
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	09/25/90-07/15/96	23 ##	1.5	2.022	12.	0.5	5.147	2.269	1.	1.5	2.	3.2
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	09/25/90-07/15/96	23	2.	7.	109.	1.	496.091	22.273	1.2	1.5	4.	5.
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/19/76-07/15/96	39 ##	0.02	0.037	0.1	0.02	0.	0.02	0.02	0.02	0.05	0.05
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	04/19/76-07/15/96	39 ##	0.005	0.009	0.04	0.005	0.	0.009	0.005	0.005	0.01	0.03
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	09/25/90-07/15/96	24	0.06	0.2	0.72	0.02	0.058	0.242	0.02	0.02	0.385	0.69
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/19/76-07/15/96	39	0.3	0.401	1.	0.05	0.045	0.212	0.2	0.3	0.5	0.7
00630 NITRITE PLUS NITRATE, TOTAL I DET. (MG/L AS N)	04/19/76-06/26/79	15	0.15	0.223	0.6	0.025	0.041	0.203	0.025	0.025	0.41	0.54
00665 PHOSPHORUS, TOTAL (MG/L AS P)	09/25/90-07/15/96	24 ##	0.05	0.065	0.2	0.05	0.001	0.035	0.05	0.05	0.05	0.1
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	09/25/90-04/07/92	7	0.01	0.024	0.11	0.005	0.001	0.038	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	09/25/90-07/15/96	23	4.3	5.152	13.9	2.5	7.084	2.662	2.68	3.4	6.1	9.32
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	09/25/90-07/15/96	23	52.	60.522	118.	34.	481.806	21.95	38.8	43.	74.	93.6
00940 CHLORIDE, TOTAL IN WATER MG/L	09/25/90-07/15/96	23	9.	8.87	17.	5.	7.937	2.817	5.4	7.	11.	12.6

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

# Parameter Inventory for Station: MANA0037

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00945 SULFATE, TOTAL (MG/L AS SO4)	09/25/90-07/15/96	23	12.	12.87	25.	6.	16.391	4.049	7.8	10.	15.	18.2
00951 FLUORIDE, TOTAL (MG/L AS F)	09/25/90-01/06/93	10 ##	0.05	0.098	0.25	0.025	0.005	0.073	0.028	0.05	0.15	0.24
00955 SILICA, DISSOLVED (MG/L AS SI02)	09/25/90-01/06/93	10	11.35	11.64	15.8	6.2	8.496	2.915	6.46	9.925	14.225	15.71
01002 ARSENIC, TOTAL (UG/L AS AS)	04/28/77-08/24/94	8 ##	1.	2.5	5.	1.	4.286	2.07	**	**	**	**
01003 ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	10/16/91-04/17/95	1	3.	3.	3.	3.	0.	0.	**	**	**	**
01012 BERYLLIUM, TOTAL (UG/L AS BE)	07/17/91-04/29/93	2 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01013 BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	10/16/91-04/17/95	1 ##	1.	1.	1.	1.	0.	0.	**	**	**	**
01027 CADMIUM, TOTAL (UG/L AS CD)	04/28/77-08/24/94	8 ##	5.	4.563	5.	1.5	1.531	1.237	**	**	**	**
01028 CADMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	10/16/91-04/17/95	1 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
01029 CHROMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	10/16/91-04/17/95	1	21.	21.	21.	21.	0.	0.	**	**	**	**
01034 CHROMIUM, TOTAL (UG/L AS CR)	04/28/77-08/24/94	8 ##	5.	9.375	25.	5.	67.411	8.21	**	**	**	**
01042 COPPER, TOTAL (UG/L AS CU)	04/28/77-08/24/94	8 ##	5.	7.5	25.	5.	50.	7.071	**	**	**	**
01043 COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	10/16/91-04/17/95	1	16.	16.	16.	16.	0.	0.	**	**	**	**
01045 IRON, TOTAL (UG/L AS FE)	04/19/79-08/24/94	4	343.5	327.	421.	200.	8624.667	92.869	**	**	**	**
01051 LEAD, TOTAL (UG/L AS PB)	04/28/77-08/24/94	8 ##	3.75	5.688	18.	1.	35.496	5.958	**	**	**	**
01052 LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	10/16/91-04/17/95	1	11.	11.	11.	11.	0.	0.	**	**	**	**
01053 MANGANESE IN BOTTOM DEPOSITS (MG/KG AS MN DRY WGT)	10/16/91-04/17/95	1	325.	325.	325.	325.	0.	0.	**	**	**	**
01055 MANGANESE, TOTAL (UG/L AS MN)	04/19/79-08/24/94	3	25.	46.667	95.	20.	1758.333	41.932	**	**	**	**
01059 THALLIUM, TOTAL (UG/L AS TL)	07/17/91-04/29/93	2 ##	7.5	7.5	10.	5.	12.5	3.536	**	**	**	**
01065 NICKEL, DISSOLVED (UG/L AS NI)	04/28/77-04/19/79	5 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
01067 NICKEL, TOTAL (UG/L AS NI)	07/17/91-08/24/94	3 ##	5.	11.667	25.	5.	133.333	11.547	**	**	**	**
01068 NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	10/16/91-04/17/95	1	16.	16.	16.	16.	0.	0.	**	**	**	**
01092 ZINC, TOTAL (UG/L AS ZN)	04/28/77-08/24/94	8 ##	7.5	10.625	25.	5.	60.268	7.763	**	**	**	**
01093 ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	10/16/91-04/17/95	1	52.	52.	52.	52.	0.	0.	**	**	**	**
01147 SELENIUM, TOTAL (UG/L AS SE)	07/17/91-08/24/94	3 ##	10.	8.333	10.	5.	8.333	2.887	**	**	**	**
01148 SELENIUM IN BOTTOM DEPOSITS (MG/KG AS SE DRY WGT)	10/16/91-04/17/95	1	34.	34.	34.	34.	0.	0.	**	**	**	**
31616 FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/19/76-04/30/96	32 ##	66.5	407.875	6000.	9.	1222870.5	1105.835	50.	50.	200.	1260.
31616 LOG FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/19/76-04/30/96	32 ##	1.809	2.059	3.778	0.954	0.33	0.574	1.699	1.699	2.301	3.077
31616 GM FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/19/76-04/30/96	32 ##	1.809	2.059	3.778	0.954	0.33	0.574	1.699	1.699	2.301	3.077
32240 TANNIN AND LIGNIN (MG/L)	07/21/92-01/06/93	2	0.6	0.6	0.7	0.5	0.02	0.141	**	**	**	**
34259 DELTA BENZENE HEXACHLORIDE TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34351 ENDOSULFAN SULFATE TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34356 ENDOSULFAN, BETA TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34361 ENDOSULFAN, ALPHA TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34366 ENDRIIN ALDEHYDE TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34480 THALLIUM DRY WGTBOTMG/KG	10/16/91-04/17/95	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
34671 PCB - 1016 TOTWUG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
38745 2,4-DB WATER, TOTUG/L	08/02/93-08/02/93	1 ##	0.15	0.15	0.15	0.15	0.	0.	**	**	**	**
39032 PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39061 PCP (PENTACHLOROPHENOL) IN BOT DEPOS DRY SOL UG/KG	10/16/91-04/17/95	1 ##	25.	25.	25.	25.	0.	0.	**	**	**	**
39300 P,P' DDT IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39310 P,P' DDD IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39320 P,P' DDE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39330 ALDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39337 ALPHA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39338 BETA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39340 GAMMA-BHC(LINDANE),WHOLE WATER,UG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39351 CHLORDANE(TECH MIX&METABS),SEDIMENTS,DRY WGT,UG/KG	10/16/91-04/17/95	1 ##	250.	250.	250.	250.	0.	0.	**	**	**	**
39363 DDD IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-04/17/95	1 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
39368 DDE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-04/17/95	1 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
39373 DDT IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-04/17/95	1 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
39380 DIELDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39383 DIELDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	10/16/91-04/17/95	1 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
39390 ENDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.025	0.025	0.025	0.025	0.	0.	**	**	**	**
39393 ENDRIN IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOLIDS)	10/16/91-04/17/95	1 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
39400 TOXAPHENE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39403 TOXAPHENE IN BOTTOM DEPOS. (UG/KILOGRAM DRY SOL.)	10/16/91-04/17/95	1	1000.	1000.	1000.	1000.	0.	0.	**	**	**	**
39410 HEPTACHLOR IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39413 HEPTACHLOR IN BOT. DEP. (UG/KILOGRAM DRY SOLIDS)	10/16/91-04/17/95	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39420 HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39488 PCB - 1221 IN THE WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39492 PCB - 1232 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39496 PCB - 1242 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot



### Parameter Inventory for Station: MANA0037

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
39500 PCB - 1248 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39508 PCB - 1260 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39516 PCBs IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39526 PCBs TOTAL,IN SEDIMENT,DRY (ISOMER ANALYSES) UG/KG	10/16/91-04/17/95	1 ##	250.	250.	250.	250.	0.	0.	**	**	**	**
39730 2,4-D IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.15	0.15	0.15	0.15	0.	0.	**	**	**	**
39740 2,4,5-T IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39760 SILVEX IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
46570 HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	04/29/93-08/24/94	2	46.	46.	50.	42.	32.	5.657	**	**	**	**
70505 PHOSPHATE,TOTAL,COLORIMETRIC METHOD (MG/L AS P)	04/19/76-06/26/79	15 ##	0.05	0.057	0.1	0.05	0.	0.018	0.05	0.05	0.05	0.1
70507 PHOSPHORUS,IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	04/19/76-07/15/96	32	0.01	0.014	0.04	0.005	0.	0.011	0.005	0.005	0.02	0.03
71900 MERCURY, TOTAL (UG/L AS HG)	04/28/77-08/24/94	7 ##	0.15	0.193	0.25	0.15	0.003	0.053	**	**	**	**
71921 MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	10/16/91-04/17/95	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
77825 ALACHLOR WHOLE WATER,UG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
82078 TURBIDITY,FIELD NEPHELOMETRIC TURBIDITY UNITS,NTU	07/21/92-04/20/94	8	3.5	6.313	22.	2.2	48.147	6.939	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0037

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
			Obs			Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00070 TURBIDITY, JACKSON CANDLE UNITS	Other-Hi Lim.	50.	7	1	0.14	3	1	0.33	2	0	0.00	2	0	0.00			
00076 TURBIDITY, HACH TURBIDIMETER	Other-Hi Lim.	50.	8	0	0.00	4	0	0.00	2	0	0.00	2	0	0.00			
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	19	0	0.00	9	0	0.00	5	0	0.00	5	0	0.00			
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	17	0	0.00	4	0	0.00	9	0	0.00	4	0	0.00			
00400 PH	Other-Hi Lim.	9.	36	2	0.06	14	0	0.00	13	2	0.15	9	0	0.00			
	Other-Lo Lim.	6.5	36	0	0.00	14	0	0.00	13	0	0.00	9	0	0.00			
00403 PH, LAB	Other-Hi Lim.	9.	23	0	0.00	11	0	0.00	6	0	0.00	6	0	0.00			
	Other-Lo Lim.	6.5	23	1	0.04	11	1	0.09	6	0	0.00	6	0	0.00			
00615 NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	39	0	0.00	15	0	0.00	14	0	0.00	10	0	0.00			
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	24	0	0.00	11	0	0.00	6	0	0.00	7	0	0.00			
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	15	0	0.00	4	0	0.00	8	0	0.00	3	0	0.00			
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	23	0	0.00	11	0	0.00	6	0	0.00	6	0	0.00			
	Drinking Water	250.	23	0	0.00	11	0	0.00	6	0	0.00	6	0	0.00			
00945 SULFATE, TOTAL (AS SO4)	Drinking Water	250.	23	0	0.00	11	0	0.00	6	0	0.00	6	0	0.00			
00951 FLUORIDE, TOTAL AS F	Drinking Water	4.	10	0	0.00	5	0	0.00	2	0	0.00	3	0	0.00			
01002 ARSENIC, TOTAL	Fresh Acute	360.	8	0	0.00	2	0	0.00	4	0	0.00	2	0	0.00			
	Drinking Water	50.	8	0	0.00	2	0	0.00	4	0	0.00	2	0	0.00			
01012 BERYLLIUM, TOTAL	Fresh Acute	130.	2	0	0.00				1	0	0.00	1	0	0.00			
	Drinking Water	4.	0 &	0	0.00												
01027 CADMIUM, TOTAL	Fresh Acute	3.9	1 &	0	0.00							1	0	0.00			
	Drinking Water	5.	1 &	0	0.00							1	0	0.00			
01034 CHROMIUM, TOTAL	Drinking Water	100.	8	0	0.00	2	0	0.00	4	0	0.00	2	0	0.00			
01042 COPPER, TOTAL	Fresh Acute	18.	7 &	0	0.00	2	0	0.00	4	0	0.00	1	0	0.00			
	Drinking Water	1300.	8	0	0.00	2	0	0.00	4	0	0.00	2	0	0.00			
01051 LEAD, TOTAL	Fresh Acute	82.	8	0	0.00	2	0	0.00	4	0	0.00	2	0	0.00			
	Drinking Water	15.	8	1	0.13	2	0	0.00	4	1	0.25	2	0	0.00			
01059 THALLIUM, TOTAL	Fresh Acute	1400.	2	0	0.00				1	0	0.00	1	0	0.00			
	Drinking Water	2.	0 &	0	0.00												
01065 NICKEL, DISSOLVED	Fresh Acute	1400.	5	0	0.00	2	0	0.00	3	0	0.00						
	Drinking Water	100.	5	0	0.00	2	0	0.00	3	0	0.00						
01067 NICKEL, TOTAL	Fresh Acute	1400.	3	0	0.00				1	0	0.00	2	0	0.00			
	Drinking Water	100.	3	0	0.00				1	0	0.00	2	0	0.00			
01092 ZINC, TOTAL	Fresh Acute	120.	8	0	0.00	2	0	0.00	4	0	0.00	2	0	0.00			
	Drinking Water	5000.	8	0	0.00	2	0	0.00	4	0	0.00	2	0	0.00			
01147 SELENIUM, TOTAL	Fresh Acute	20.	3	0	0.00				1	0	0.00	2	0	0.00			
	Drinking Water	50.	3	0	0.00				1	0	0.00	2	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	32	11	0.34	11	6	0.55	13	3	0.23	8	2	0.25			
34356 ENDOSULFAN, BETA, TOTAL	Fresh Acute	0.22	1	0	0.00							1	0	0.00			
34361 ENDOSULFAN, ALPHA, TOTAL	Fresh Acute	0.22	1	0	0.00							1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### EPA Water Quality Criteria Analysis for Station: MANA0037

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
39032	PCP (PENTACHLOROPHENOL) WHOLE WATER SAMP	Fresh Acute	20.	1	0	0.00						1	0	0.00			
		Drinking Water	1.	1	0	0.00						1	0	0.00			
39300	P,P' DDT IN WHOLE WATER SAMPLE	Fresh Acute	1.1	1	0	0.00						1	0	0.00			
39310	P,P' DDD IN WHOLE WATER SAMPLE	Fresh Acute	0.6	1	0	0.00						1	0	0.00			
39320	P,P' DDE IN WHOLE WATER SAMPLE	Fresh Acute	1050.	1	0	0.00						1	0	0.00			
39330	ALDRIN IN WHOLE WATER SAMPLE	Fresh Acute	3.	1	0	0.00						1	0	0.00			
39340	GAMMA-BHC(LINDANE), WHOLE WATER	Fresh Acute	2.	1	0	0.00						1	0	0.00			
		Drinking Water	0.2	1	0	0.00						1	0	0.00			
39380	DIELDRIN IN WHOLE WATER SAMPLE	Fresh Acute	2.5	1	0	0.00						1	0	0.00			
39390	ENDRIN IN WHOLE WATER SAMPLE	Fresh Acute	0.18	1	0	0.00						1	0	0.00			
		Drinking Water	2.	1	0	0.00						1	0	0.00			
39400	TOXAPHENE IN WHOLE WATER SAMPLE	Fresh Acute	0.73	1	0	0.00						1	0	0.00			
		Drinking Water	3.	1	0	0.00						1	0	0.00			
39410	HEPTACHLOR IN WHOLE WATER SAMPLE	Fresh Acute	0.52	1	0	0.00						1	0	0.00			
		Drinking Water	0.4	1	0	0.00						1	0	0.00			
39420	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE	Fresh Acute	0.52	1	0	0.00						1	0	0.00			
		Drinking Water	0.2	1	0	0.00						1	0	0.00			
39730	2,4-D IN WHOLE WATER SAMPLE	Drinking Water	70.	1	0	0.00						1	0	0.00			
39760	SILVEX IN WHOLE WATER SAMPLE	Drinking Water	50.	1	0	0.00						1	0	0.00			
71900	MERCURY, TOTAL	Fresh Acute	2.4	7	0	0.00	2	0	0.00	3	0	0.00	2	0	0.00		
		Drinking Water	2.	7	0	0.00	2	0	0.00	3	0	0.00	2	0	0.00		
82078	TURBIDITY, FIELD	Other-Hi Lim.	50.	8	0	0.00	4	0	0.00	2	0	0.00	2	0	0.00		

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0037

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/19/76-07/15/96	13	7.	7.738	16.3	1.3	25.731	5.073	1.66	3.7	12.1	16.18
00300	OXYGEN, DISSOLVED MG/L	04/19/76-04/17/91	4	10.95	10.575	11.6	8.8	1.576	1.255	**	**	**	**
00400p	PH (STANDARD UNITS)	04/19/76-07/15/96	14	7.4	7.293	7.7	6.6	0.116	0.341	6.65	7.125	7.525	7.65
00400p	CONVERTED PH (STANDARD UNITS)	04/19/76-07/15/96	14	7.4	7.147	7.7	6.6	0.139	0.373	6.65	7.125	7.525	7.65
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/19/76-07/15/96	14	0.04	0.071	0.251	0.02	0.005	0.071	0.023	0.03	0.079	0.225
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/19/76-07/15/96	15 ##	0.02	0.037	0.08	0.02	0.	0.02	0.02	0.02	0.05	0.068
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/19/76-07/15/96	15 ##	0.005	0.012	0.04	0.005	0.	0.012	0.005	0.005	0.01	0.034
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/19/76-07/15/96	15	0.3	0.36	1.	0.1	0.047	0.216	0.16	0.2	0.4	0.76
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/19/76-04/30/96	11	200.	250.	1500.	50.	177500.	421.307	50.	50.	200.	1240.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/19/76-04/30/96	11	2.301	2.107	3.176	1.699	0.216	0.465	1.699	1.699	2.301	3.001
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			127.914								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0037

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/19/76-07/15/96	14	17.1	16.757	25.6	8.6	28.606	5.348	9.8	11.85	21.775	24.8
00300	OXYGEN, DISSOLVED MG/L	04/19/76-04/17/91	9	10.2	10.367	13.1	8.4	2.28	1.51	8.4	9.1	11.55	13.1
00400p	PH (STANDARD UNITS)	04/19/76-07/15/96	13	8.3	8.146	9.2	7.2	0.549	0.741	7.24	7.4	8.8	9.12
00400p	CONVERTED PH (STANDARD UNITS)	04/19/76-07/15/96	13	8.3	7.698	9.2	7.2	0.767	0.876	7.24	7.4	8.8	9.12
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/19/76-07/15/96	13	0.005	0.02	0.063	0.001	0.001	0.023	0.001	0.002	0.041	0.058
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/19/76-07/15/96	14 ##	0.05	0.041	0.1	0.02	0.001	0.023	0.02	0.02	0.05	0.075
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/19/76-07/15/96	14 ##	0.005	0.009	0.04	0.005	0.	0.01	0.005	0.005	0.005	0.03
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/19/76-07/15/96	14	0.3	0.304	0.5	0.05	0.015	0.122	0.125	0.2	0.4	0.5
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/19/76-04/30/96	13	83.	561.	6000.	50.	2680718.	1637.29	50.	50.	150.	3764.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/19/76-04/30/96	13	1.919	2.062	3.778	1.699	0.344	0.587	1.699	1.699	2.151	3.312
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			115.322								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

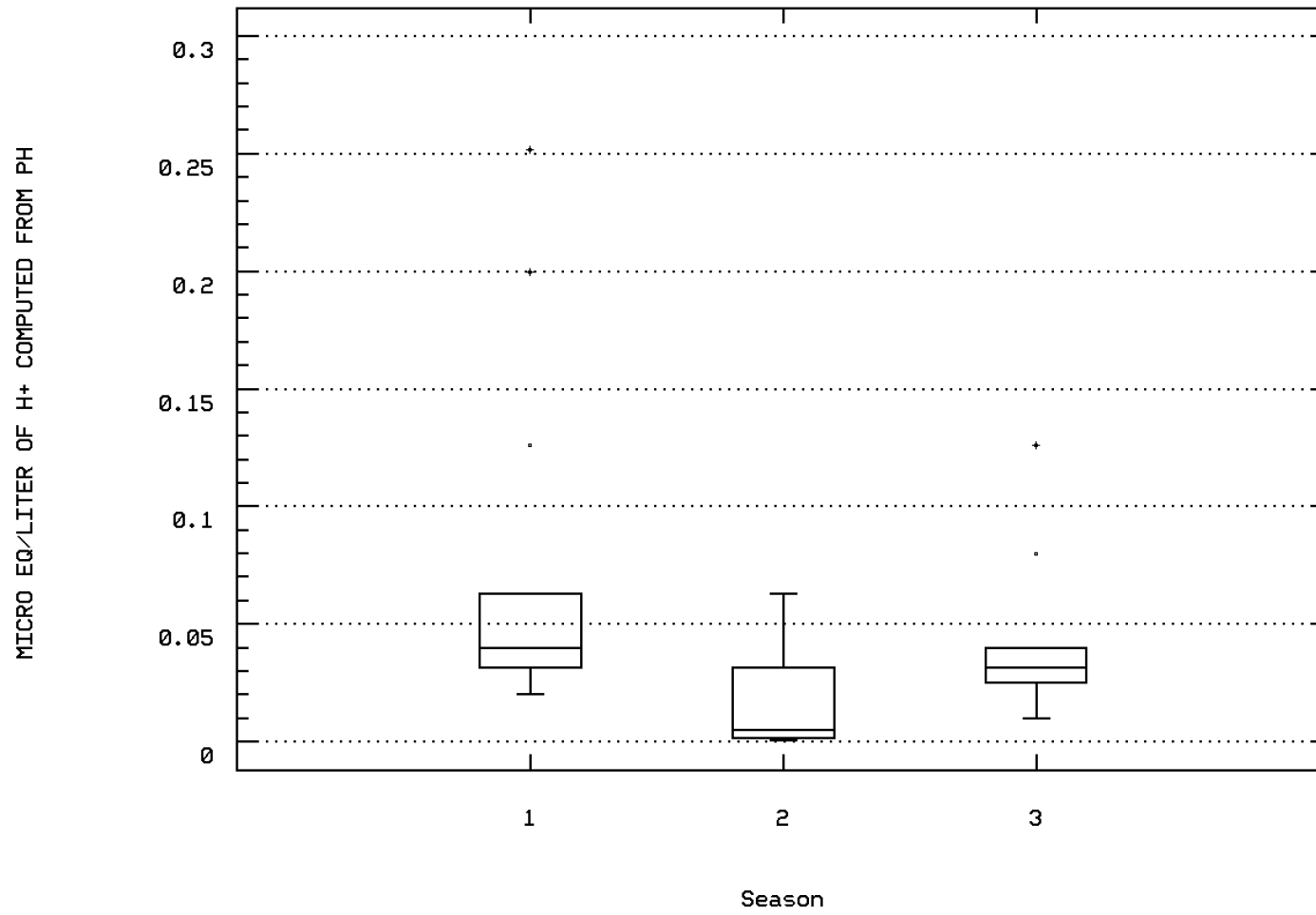
### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0037

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/19/76-07/15/96	9	23.9	23.2	28.	14.8	17.718	4.209	14.8	20.7	25.9	28.
00300	OXYGEN, DISSOLVED MG/L	04/19/76-04/17/91	4	7.9	8.325	9.9	7.6	1.129	1.063	**	**	**	**
00400p	PH (STANDARD UNITS)	04/19/76-07/15/96	9	7.5	7.511	8.	6.9	0.131	0.362	6.9	7.25	7.8	8.
00400p	CONVERTED PH (STANDARD UNITS)	04/19/76-07/15/96	9	7.5	7.376	8.	6.9	0.152	0.389	6.9	7.25	7.8	8.
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/19/76-07/15/96	9	0.032	0.042	0.126	0.01	0.001	0.038	0.01	0.018	0.06	0.126
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/19/76-07/15/96	10 ##	0.02	0.032	0.05	0.02	0.	0.015	0.02	0.02	0.05	0.05
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/19/76-07/15/96	10 ##	0.005	0.007	0.01	0.005	0.	0.003	0.005	0.005	0.01	0.01
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/19/76-07/15/96	10	0.65	0.6	0.8	0.3	0.033	0.183	0.3	0.45	0.725	0.8
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/19/76-04/30/96	8 ##	50.	376.125	2000.	9.	482617.268	694.707	**	**	**	**
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/19/76-04/30/96	8 ##	1.699	1.987	3.301	0.954	0.552	0.743	**	**	**	**
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			97.058								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0037 Parameter Code: 00400

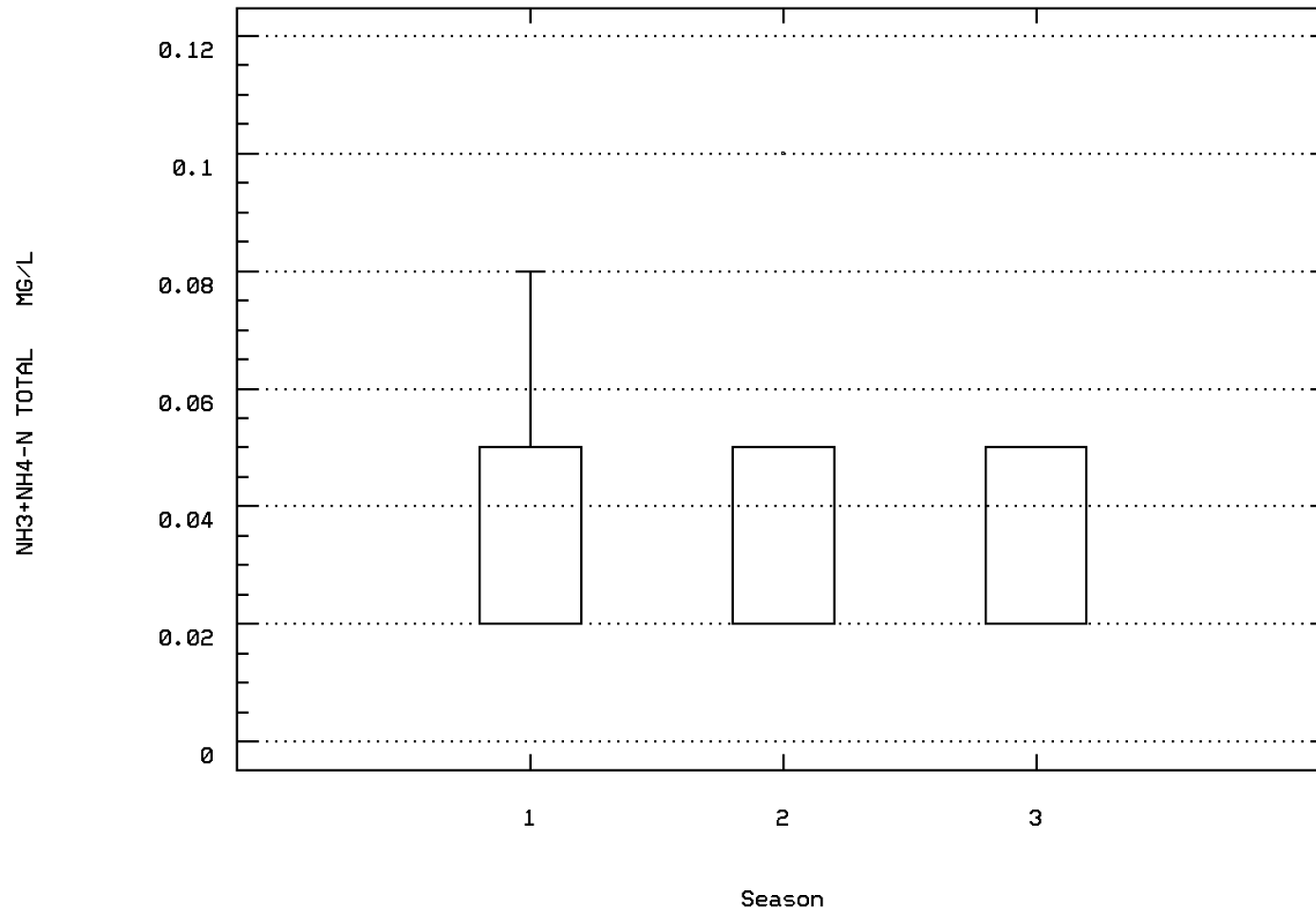
MICRO EQ/LITER OF H+ COMPUTED FROM PH



ROUTE 705

Station: MANA0037 Parameter Code: 00610

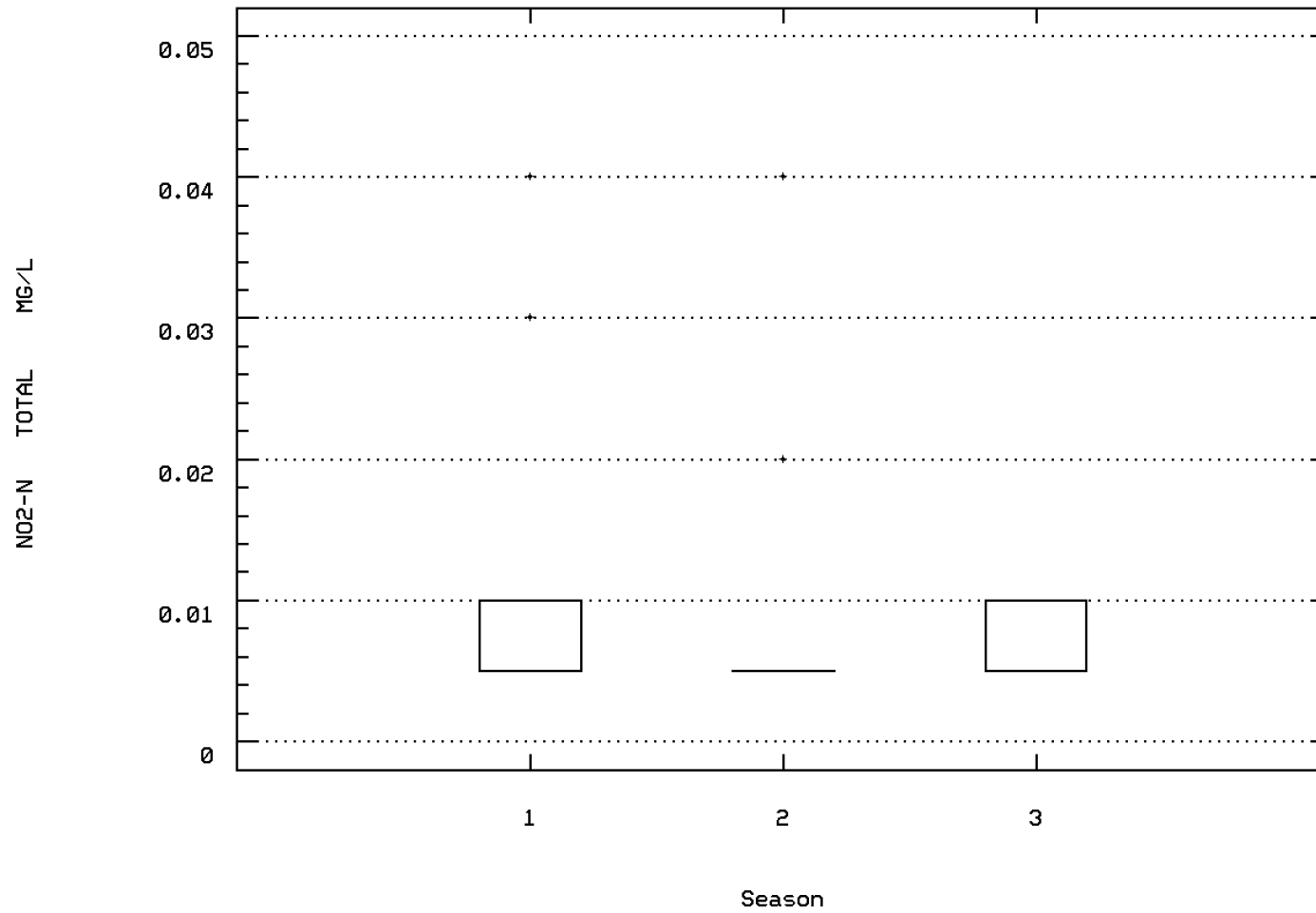
NITROGEN, AMMONIA, TOTAL (MG/L AS N)



ROUTE 705

Station: MANA0037 Parameter Code: 00615

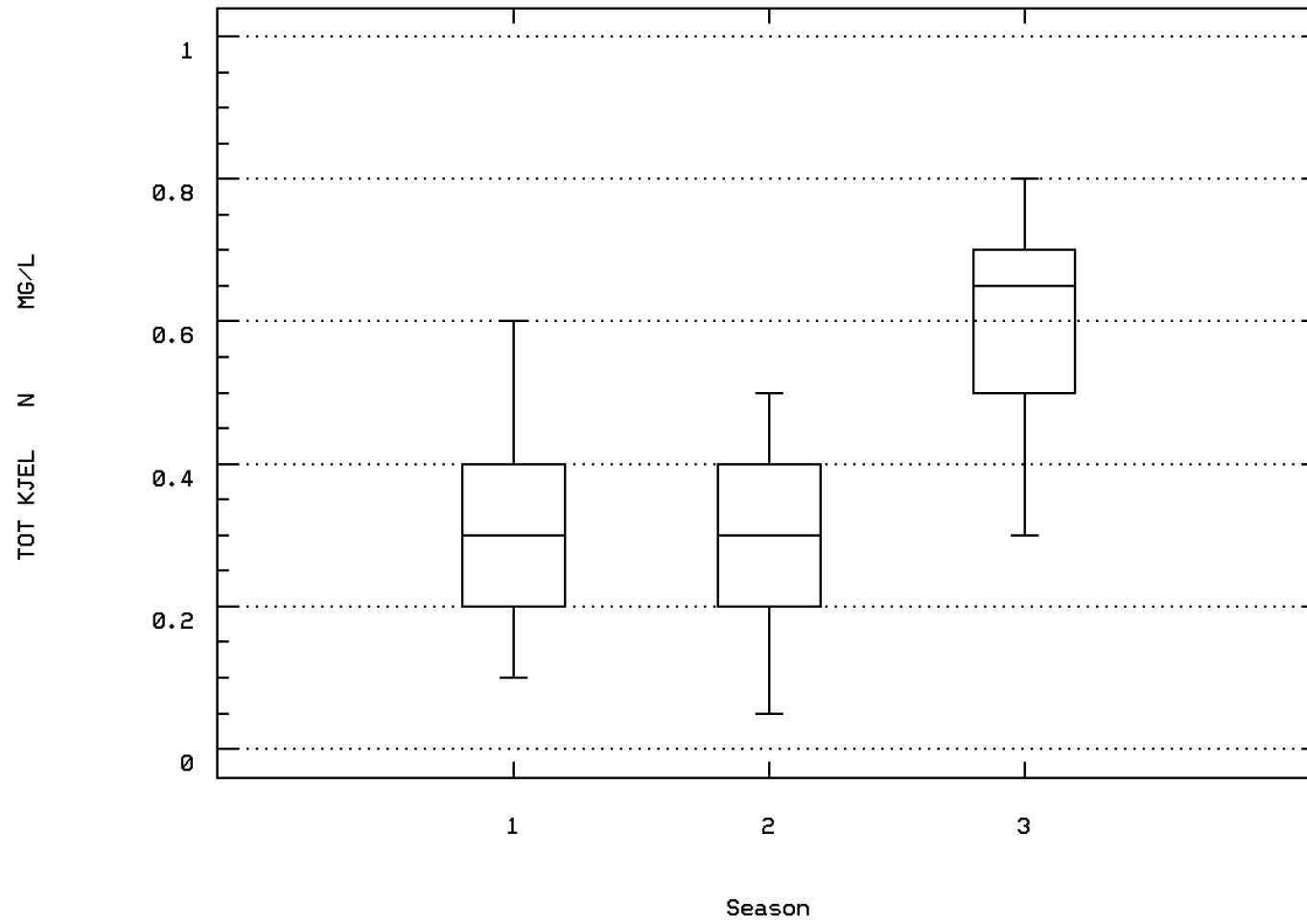
NITRITE NITROGEN, TOTAL (MG/L AS N)



ROUTE 705

Station: MANA0037 Parameter Code: 00625

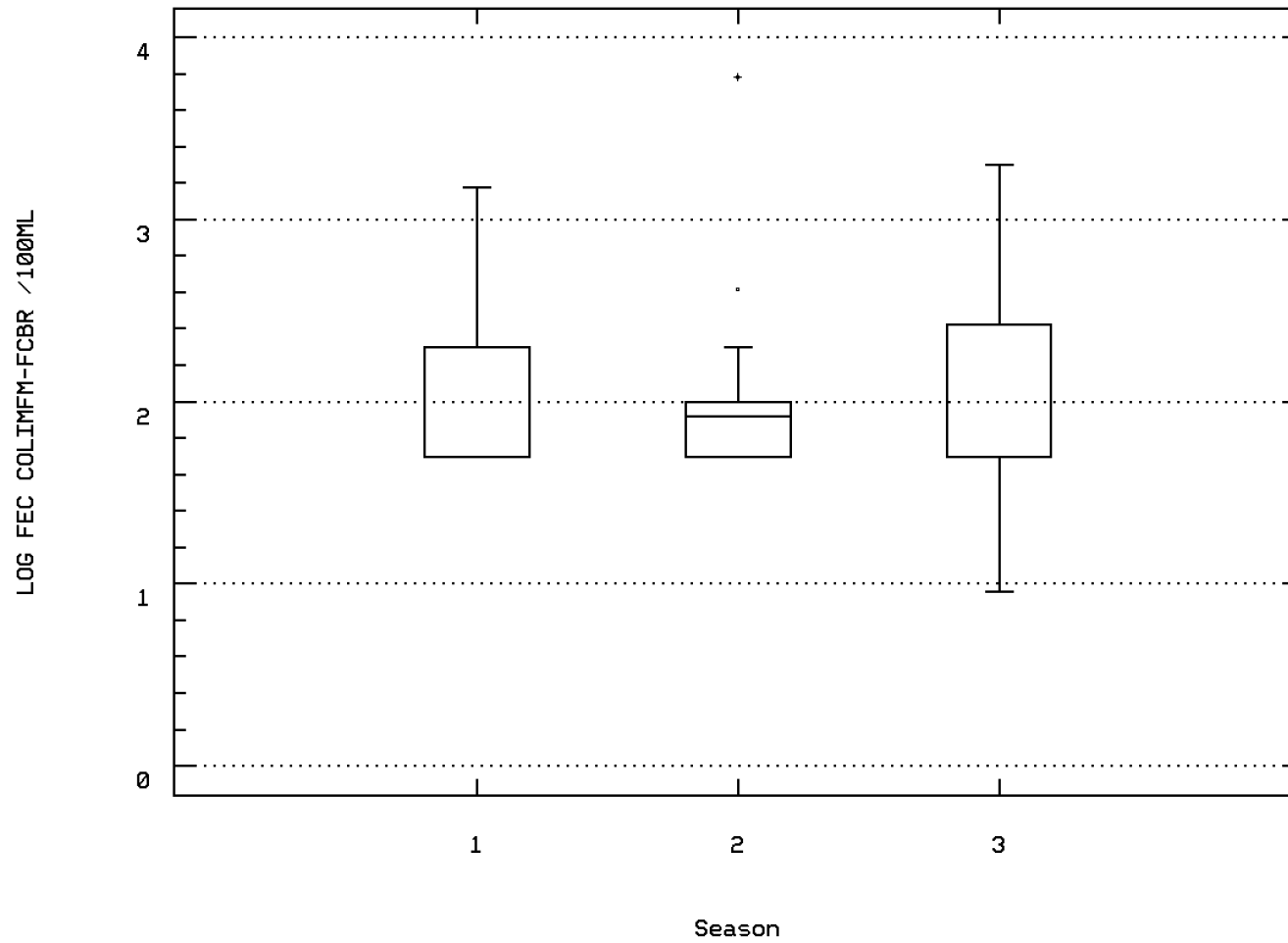
NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)



ROUTE 705

Station: MANA0037 Parameter Code: 31616

LOG FECAL COLIFORM, MEMBR FILTER, M-FC BR



ROUTE 705



## Station Inventory for Station: MANA0038

NPS Station ID: MANA0038  
Location: ROUTE 705 BRIDGE  
Station Type: /TYPA/AMBNT/STREAM  
RMI-Indexes:

LAT/LON: 38.826671/ -77.571948

Agency: 21VASWCB  
FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
STORET Station ID(s): 1ALH003.97 /VA1A07AX0136/VA1A3X0136  
Within Park Boundary: No

Date Created: 04/19/76

RMI-Miles:  
HUC: 02070010  
Major Basin: 02-NORTH-ATLANTIC  
Minor Basin: 1-POTOMAC-SHENANDOAH  
RF1 Index: 02070010056  
RF3 Index: 02070010005505.30

Depth of Water: 0  
Elevation: 0

RF1 Mile Point: 3.450  
RF3 Mile Point: 5.98

Aquifer:  
Water Body ID:  
ECO Region:  
Distance from RF1: 0.00  
Distance from RF3: 0.02

On/Off RF1: OFF  
On/Off RF3:

Description:  
VIRGINIA STATE WATER CONTROL BOARD      AMBIENT MONITORING      BASIN: 1A POTOMAC      REGION: 3 NORTHERN  
RIVER: LITTLE BULL RUN      SECTION: 07A      TOPO MAP #: 0027      TOPO MAP NAME: GAINSVILLE, VA

### Parameter Inventory for Station: MANA0038

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/19/76-07/15/96	40	13.6	13.995	27.	0.	69.225	8.32	1.21	7.225	22.375	24.81
00070 TURBIDITY, (JACKSON CANDLE UNITS)	09/25/90-04/07/92	6	3.25	26.817	140.	2.5	3081.19	55.508	**	**	**	**
00076 TURBIDITY,HACH TURBIDIMETER (FORMAZIN TURB UNIT)	08/24/94-07/15/96	8	8.35	8.2	14.2	2.8	18.654	4.319	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	04/17/91-01/06/93	7	41.	48.143	126.	6.	1704.143	41.281	**	**	**	**
00094 SPECIFIC CONDUCTANCE,FIELD (UMHOS/CM @ 25C)	01/09/92-07/15/96	19	136.	145.211	247.	111.	1080.62	32.873	112.	121.	169.	177.
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	09/25/90-07/15/96	22	131.	137.091	266.	94.	1383.61	37.197	100.2	111.75	159.5	172.8
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE MG/L	01/09/92-07/15/96	19	10.2	9.605	13.7	5.1	5.478	2.341	6.4	8.	10.8	13.5
00300 OXYGEN, DISSOLVED MG/L	04/19/76-07/17/91	21	10.3	10.052	13.5	6.1	3.299	1.816	7.68	8.8	11.	13.16
00310 BOD, 5 DAY, 20 DEG C MG/L	09/25/90-07/15/96	22	1.1	1.473	3.	0.5	0.409	0.639	1.	1.	2.	2.42
00340 COD, .25N K2CR2O7 MG/L	09/25/90-07/15/96	22	12.	16.045	51.	5.	121.95	11.043	8.	10.	19.5	36.7
00400 PH (STANDARD UNITS)	04/19/76-07/15/96	40	7.5	7.48	8.7	6.6	0.203	0.45	6.81	7.3	7.675	8.27
00400 CONVERTED PH (STANDARD UNITS)	04/19/76-07/15/96	40	7.5	7.285	8.7	6.6	0.242	0.492	6.81	7.3	7.675	8.27
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/19/76-07/15/96	40	0.032	0.052	0.251	0.002	0.003	0.054	0.006	0.021	0.05	0.155
00403 PH, LAB, STANDARD UNITS SU	09/25/90-07/15/96	22	7.1	7.105	7.6	6.5	0.115	0.339	6.63	6.8	7.5	7.5
00403 CONVERTED PH, LAB, STANDARD UNITS	09/25/90-07/15/96	22	7.1	6.982	7.6	6.5	0.13	0.361	6.63	6.8	7.5	7.5
00403 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	09/25/90-07/15/96	22	0.079	0.104	0.316	0.025	0.006	0.08	0.032	0.032	0.158	0.236
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	09/25/90-07/15/96	22	35.5	38.455	81.	10.	310.355	17.617	15.9	26.	50.	65.
00500 RESIDUE, TOTAL (MG/L)	08/17/76-07/15/96	23	99.	107.087	248.	72.	1267.265	35.599	82.4	90.	106.	142.8
00505 RESIDUE, TOTAL VOLATILE (MG/L)	08/17/76-07/15/96	23	28.	28.87	58.	10.	126.846	11.263	14.4	21.	35.	46.2
00510 RESIDUE, TOTAL FIXED (MG/L)	08/17/76-07/15/96	23	70.	78.217	203.	44.	1051.087	32.42	53.	60.	85.	115.4
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	09/25/90-07/15/96	22	3.	10.257	161.	0.15	1137.753	33.731	0.8	1.5	5.	7.
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	09/25/90-07/15/96	22 ##	1.5	1.955	15.	0.5	8.593	2.931	1.	1.	1.5	1.85
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	09/25/90-07/15/96	22	2.	9.091	146.	0.5	937.444	30.618	1.5	1.5	4.	6.
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/19/76-07/15/96	41 ##	0.05	0.082	1.5	0.02	0.053	0.23	0.02	0.02	0.05	0.1
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	04/19/76-07/15/96	41 ##	0.005	0.011	0.04	0.005	0.	0.01	0.005	0.005	0.01	0.03
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	09/25/90-07/15/96	23	0.18	0.271	0.77	0.02	0.051	0.226	0.028	0.06	0.43	0.664
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/19/76-07/15/96	41	0.3	0.402	1.8	0.05	0.085	0.292	0.2	0.25	0.5	0.6
00630 NITRITE PLUS NITRATE, TOTAL I DET. (MG/L AS N)	04/19/76-06/26/79	18	0.335	0.374	1.3	0.025	0.101	0.318	0.025	0.138	0.505	0.85
00665 PHOSPHORUS, TOTAL (MG/L AS P)	09/25/90-07/15/96	23 ##	0.05	0.065	0.2	0.05	0.001	0.035	0.05	0.05	0.05	0.1
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	09/25/90-04/07/92	6	0.015	0.033	0.13	0.005	0.002	0.048	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	09/25/90-07/15/96	22	4.4	4.914	12.3	1.6	7.09	2.663	2.33	2.875	5.9	9.91
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	09/25/90-07/15/96	22	48.	49.909	88.	34.	179.229	13.388	35.2	39.	58.5	70.4
00940 CHLORIDE,TOTAL IN WATER MG/L	09/25/90-07/15/96	22	8.	8.909	21.	4.	16.563	4.07	4.	6.	11.25	14.4

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

# Parameter Inventory for Station: MANA0038

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00945 SULFATE, TOTAL (MG/L AS SO4)	09/25/90-07/15/96	22	12.	11.636	22.	3.	26.338	5.132	3.3	8.5	14.25	20.4
00951 FLUORIDE, TOTAL (MG/L AS F)	09/25/90-01/06/93	9 ##	0.05	0.091	0.25	0.025	0.005	0.074	0.025	0.05	0.145	0.25
00955 SILICA, DISSOLVED (MG/L AS SI02)	09/25/90-01/06/93	9	11.3	10.956	12.8	8.5	2.205	1.485	8.5	9.65	12.35	12.8
01002 ARSENIC, TOTAL (UG/L AS AS)	04/28/77-08/24/94	7 ##	1.	2.143	5.	1.	3.81	1.952	**	**	**	**
01003 ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	07/17/91-04/17/95	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01012 BERYLLIUM, TOTAL (UG/L AS BE)	04/29/93-04/29/93	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01013 BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	07/17/91-04/17/95	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01027 CADMIUM, TOTAL (UG/L AS CD)	04/28/77-08/24/94	7 ##	5.	4.5	5.	1.5	1.75	1.323	**	**	**	**
01028 CADMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	07/17/91-04/17/95	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01029 CHROMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	07/17/91-04/17/95	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01034 CHROMIUM, TOTAL (UG/L AS CR)	04/28/77-08/24/94	7 ##	5.	7.857	25.	5.	57.143	7.559	**	**	**	**
01042 COPPER, TOTAL (UG/L AS CU)	04/28/77-08/24/94	7 ##	5.	7.857	25.	5.	57.143	7.559	**	**	**	**
01043 COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	07/17/91-04/17/95	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01045 IRON, TOTAL (UG/L AS FE)	04/19/79-08/24/94	4	449.	475.25	703.	300.	28280.917	168.169	**	**	**	**
01051 LEAD, TOTAL (UG/L AS PB)	04/28/77-08/24/94	7 ##	3.	5.5	15.	1.	29.417	5.424	**	**	**	**
01052 LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	07/17/91-04/17/95	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01053 MANGANESE IN BOTTOM DEPOSITS (MG/KG AS MN DRY WGT)	07/17/91-04/17/95	1	105.	105.	105.	105.	0.	0.	**	**	**	**
01055 MANGANESE, TOTAL (UG/L AS MN)	04/19/79-08/24/94	2 ##	22.5	22.5	25.	20.	12.5	3.536	**	**	**	**
01059 THALLIUM, TOTAL (UG/L AS TL)	04/29/93-04/29/93	1 ##	10.	10.	10.	10.	0.	0.	**	**	**	**
01065 NICKEL, DISSOLVED (UG/L AS NI)	04/28/77-04/19/79	5 ##	50.	50.	50.	50.	0.	0.	**	**	**	**
01067 NICKEL, TOTAL (UG/L AS NI)	04/29/93-08/24/94	2 ##	15.	15.	25.	5.	200.	14.142	**	**	**	**
01068 NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	07/17/91-04/17/95	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01092 ZINC, TOTAL (UG/L AS ZN)	04/28/77-08/24/94	7	10.	18.571	40.	5.	172.619	13.138	**	**	**	**
01093 ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	07/17/91-04/17/95	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01147 SELENIUM, TOTAL (UG/L AS SE)	04/29/93-08/24/94	2 ##	10.	10.	10.	10.	0.	0.	**	**	**	**
01148 SELENIUM IN BOTTOM DEPOSITS (MG/KG AS SE DRY WGT)	07/17/91-04/17/95	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
31616 FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/19/76-04/30/96	35	300.	721.571	4900.	45.	1150348.193	1072.543	50.	100.	600.	2140.
31616 LOG FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/19/76-04/30/96	35	2.477	2.472	3.69	1.653	0.354	0.595	1.699	2.	2.778	3.33
31616 GM FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/19/76-04/30/96	35	2.477	2.472	3.69	1.653	0.354	0.595	1.699	2.	2.778	3.33
32240 TANNIN AND LIGNIN (MG/L)	07/21/92-01/06/93	2	0.65	0.65	0.7	0.6	0.005	0.071	**	**	**	**
34259 DELTA BENZENE HEXACHLORIDE TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34351 ENDOSULFAN SULFATE TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34356 ENDOSULFAN, BETA TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34361 ENDOSULFAN, ALPHA TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34366 ENDRIIN ALDEHYDE TOTWUG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
34480 THALLIUM DRY WGTBOTMG/KG	07/17/91-04/17/95	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
34671 PCB - 1016 TOTWUG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
38745 2,4-DB WATER, TOTUG/L	08/02/93-08/02/93	1 ##	0.15	0.15	0.15	0.15	0.	0.	**	**	**	**
39032 PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39300 P,P' DDT IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39310 P,P' DDD IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39320 P,P' DDE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39330 ALDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39337 ALPHA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39338 BETA BENZENE HEXACHLORIDE IN WHOLE WATER SAMP	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39340 GAMMA-BHC(LINDANE),WHOLE WATER,UG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39380 DIELDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39390 ENDRIN IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.025	0.025	0.025	0.025	0.	0.	**	**	**	**
39400 TOXAPHENE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39410 HEPTACHLOR IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39420 HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
39488 PCB - 1221 IN THE WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39492 PCB - 1232 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39496 PCB - 1242 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39500 PCB - 1248 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39508 PCB - 1260 PCB SERIES WHOLE WATER SAMPLE UG/L	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39516 PCBs IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**
39730 2,4-D IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.15	0.15	0.15	0.15	0.	0.	**	**	**	**
39740 2,4,5-T IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
39760 SILVEX IN WHOLE WATER SAMPLE (UG/L)	08/02/93-08/02/93	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
46570 HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	04/29/93-08/24/94	2	42.5	42.5	48.	37.	60.5	7.778	**	**	**	**
50060 CHLORINE, TOTAL RESIDUAL (MG/L)	12/27/76-12/27/76	1	0.	0.	0.	0.	0.	0.	**	**	**	**
70505 PHOSPHATE,TOTAL,COLORIMETRIC METHOD (MG/L AS P)	04/19/76-06/26/79	18 ##	0.05	0.056	0.1	0.05	0.	0.016	0.05	0.05	0.05	0.1

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0038

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
70507 PHOSPHORUS,IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	04/19/76-07/15/96	35	0.01	0.035	0.5	0.005	0.007	0.085	0.005	0.005	0.03	0.06
71900 MERCURY, TOTAL (UG/L AS HG)	04/28/77-08/24/94	6 ##	0.2	0.2	0.25	0.15	0.003	0.055	**	**	**	**
71921 MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	07/17/91-04/17/95	1 ##	0.15	0.15	0.15	0.15	0.	0.	**	**	**	**
77825 ALACHLOR WHOLE WATER,UG/L	08/02/93-08/02/93	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
82078 TURBIDITY,FIELD NEPHELOMETRIC TURBIDITY UNITS,NTU	07/21/92-04/20/94	8	4.1	6.4	26.	1.4	65.066	8.066	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0038

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00070 TURBIDITY, JACKSON CANDLE UNITS	Other-Hi Lim.	50.	6	1	0.17	2	1	0.50	2	0	0.00	2	0	0.00			
00076 TURBIDITY, HACH TURBIDIMETER	Other-Hi Lim.	50.	8	0	0.00	4	0	0.00	2	0	0.00	2	0	0.00			
00299 OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	19	0	0.00	9	0	0.00	5	0	0.00	5	0	0.00			
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	21	0	0.00	7	0	0.00	9	0	0.00	5	0	0.00			
00400 PH	Other-Hi Lim.	9.	40	0	0.00	17	0	0.00	13	0	0.00	10	0	0.00			
	Other-Lo Lim.	6.5	40	0	0.00	17	0	0.00	13	0	0.00	10	0	0.00			
00403 PH, LAB	Other-Hi Lim.	9.	22	0	0.00	10	0	0.00	6	0	0.00	6	0	0.00			
	Other-Lo Lim.	6.5	22	1	0.05	10	1	0.10	6	0	0.00	6	0	0.00			
00615 NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	41	0	0.00	17	0	0.00	14	0	0.00	10	0	0.00			
00620 NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	23	0	0.00	10	0	0.00	6	0	0.00	7	0	0.00			
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	18	0	0.00	7	0	0.00	8	0	0.00	3	0	0.00			
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	22	0	0.00	10	0	0.00	6	0	0.00	6	0	0.00			
	Drinking Water	250.	22	0	0.00	10	0	0.00	6	0	0.00	6	0	0.00			
00945 SULFATE, TOTAL (AS SO4)	Drinking Water	250.	22	0	0.00	10	0	0.00	6	0	0.00	6	0	0.00			
00951 FLUORIDE, TOTAL AS F	Drinking Water	4.	9	0	0.00	4	0	0.00	2	0	0.00	3	0	0.00			
01002 ARSENIC, TOTAL	Fresh Acute	360.	7	0	0.00	2	0	0.00	4	0	0.00	1	0	0.00			
	Drinking Water	50.	7	0	0.00	2	0	0.00	4	0	0.00	1	0	0.00			
01012 BERYLLIUM, TOTAL	Fresh Acute	130.	1	0	0.00		1	0	0.00								
	Drinking Water	4.	0 &	0	0.00												
01027 CADMIUM, TOTAL	Fresh Acute	3.9	1 &	0	0.00							1	0	0.00			
	Drinking Water	5.	1 &	0	0.00							1	0	0.00			
01034 CHROMIUM, TOTAL	Drinking Water	100.	7	0	0.00	2	0	0.00	4	0	0.00	1	0	0.00			
01042 COPPER, TOTAL	Fresh Acute	18.	6 &	0	0.00	2	0	0.00	4	0	0.00						
	Drinking Water	1300.	7	0	0.00	2	0	0.00	4	0	0.00	1	0	0.00			
01051 LEAD, TOTAL	Fresh Acute	82.	7	0	0.00	2	0	0.00	4	0	0.00	1	0	0.00			
	Drinking Water	15.	7	1	0.14	2	1	0.50	4	0	0.00	1	0	0.00			
01059 THALLIUM, TOTAL	Fresh Acute	1400.	1	0	0.00				1	0	0.00						
	Drinking Water	2.	0 &	0	0.00												
01065 NICKEL, DISSOLVED	Fresh Acute	1400.	5	0	0.00	2	0	0.00	3	0	0.00						
	Drinking Water	100.	5	0	0.00	2	0	0.00	3	0	0.00						
01067 NICKEL, TOTAL	Fresh Acute	1400.	2	0	0.00				1	0	0.00	1	0	0.00			
	Drinking Water	100.	2	0	0.00				1	0	0.00	1	0	0.00			
01092 ZINC, TOTAL	Fresh Acute	120.	7	0	0.00	2	0	0.00	4	0	0.00	1	0	0.00			
	Drinking Water	5000.	7	0	0.00	2	0	0.00	4	0	0.00	1	0	0.00			
01147 SELENIUM, TOTAL	Fresh Acute	20.	2	0	0.00				1	0	0.00	1	0	0.00			
	Drinking Water	50.	2	0	0.00				1	0	0.00	1	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	35	23	0.66	14	7	0.50	13	11	0.85	8	5	0.63			
34356 ENDOSULFAN, BETA, TOTAL	Fresh Acute	0.22	1	0	0.00							1	0	0.00			
34361 ENDOSULFAN, ALPHA, TOTAL	Fresh Acute	0.22	1	0	0.00							1	0	0.00			
39032 PCP (PENTACHLOROPHENOL) WHOLE WATER SAMP	Fresh Acute	20.	1	0	0.00							1	0	0.00			
	Drinking Water	1.	1	0	0.00							1	0	0.00			
39300 P,P' DDT IN WHOLE WATER SAMPLE	Fresh Acute	1.1	1	0	0.00							1	0	0.00			
39310 P,P' DDD IN WHOLE WATER SAMPLE	Fresh Acute	0.6	1	0	0.00							1	0	0.00			
39320 P,P' DDE IN WHOLE WATER SAMPLE	Fresh Acute	1050.	1	0	0.00							1	0	0.00			
39330 ALDRIN IN WHOLE WATER SAMPLE	Fresh Acute	3.	1	0	0.00							1	0	0.00			
39340 GAMMA-BHC(LINDANE), WHOLE WATER	Fresh Acute	2.	1	0	0.00							1	0	0.00			
	Drinking Water	0.2	1	0	0.00							1	0	0.00			
39380 DIELDRIN IN WHOLE WATER SAMPLE	Fresh Acute	2.5	1	0	0.00							1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### EPA Water Quality Criteria Analysis for Station: MANA0038

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
39390	ENDRIN IN WHOLE WATER SAMPLE	Fresh Acute 0.18	1	0	0.00							1	0	0.00			
		Drinking Water 2.	1	0	0.00							1	0	0.00			
39400	TOXAPHENE IN WHOLE WATER SAMPLE	Fresh Acute 0.73	1	0	0.00							1	0	0.00			
		Drinking Water 3.	1	0	0.00							1	0	0.00			
39410	HEPTACHLOR IN WHOLE WATER SAMPLE	Fresh Acute 0.52	1	0	0.00							1	0	0.00			
		Drinking Water 0.4	1	0	0.00							1	0	0.00			
39420	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE	Fresh Acute 0.52	1	0	0.00							1	0	0.00			
		Drinking Water 0.2	1	0	0.00							1	0	0.00			
39730	2,4-D IN WHOLE WATER SAMPLE	Drinking Water 70.	1	0	0.00							1	0	0.00			
39760	SILVEX IN WHOLE WATER SAMPLE	Drinking Water 50.	1	0	0.00							1	0	0.00			
50060	CHLORINE, TOTAL RESIDUAL	Fresh Acute 0.019	1	0	0.00	1	0	0.00									
71900	MERCURY, TOTAL	Fresh Acute 2.4	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
		Drinking Water 2.	6	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00			
82078	TURBIDITY, FIELD	Other-Hi Lim. 50.	8	0	0.00	4	0	0.00	2	0	0.00	2	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### Seasonal Analysis for Season #1: 10/01 to 3/14 - Station MANA0038

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/19/76-07/15/96	16	5.5	6.244	16.	0.	27.447	5.239	0.07	1.375	10.1	15.23
00400p	PH (STANDARD UNITS)	04/19/76-07/15/96	17	7.4	7.294	7.7	6.6	0.111	0.333	6.68	7.1	7.5	7.62
00400p	CONVERTED PH (STANDARD UNITS)	04/19/76-07/15/96	17	7.4	7.151	7.7	6.6	0.132	0.364	6.68	7.1	7.5	7.62
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/19/76-07/15/96	17	0.04	0.071	0.251	0.02	0.005	0.069	0.024	0.032	0.088	0.21
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/19/76-07/15/96	17 ##	0.05	0.137	1.5	0.02	0.125	0.354	0.02	0.02	0.07	0.46
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/19/76-07/15/96	17 ##	0.005	0.011	0.04	0.005	0.	0.011	0.005	0.005	0.015	0.032
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/19/76-07/15/96	17	0.3	0.318	1.	0.05	0.046	0.215	0.05	0.2	0.4	0.6
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/19/76-04/30/96	14	150.	410.714	2200.	50.	393914.835	627.626	50.	50.	425.	1800.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/19/76-04/30/96	14	2.151	2.249	3.342	1.699	0.315	0.561	1.699	1.699	2.626	3.244
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			177.493								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

### Seasonal Analysis for Season #2: 3/15 to 7/14 - Station MANA0038

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/19/76-07/15/96	14	17.1	16.686	25.	8.2	26.638	5.161	9.7	12.225	21.325	24.45
00400p	PH (STANDARD UNITS)	04/19/76-07/15/96	13	7.5	7.685	8.7	7.3	0.196	0.443	7.3	7.3	8.	8.54
00400p	CONVERTED PH (STANDARD UNITS)	04/19/76-07/15/96	13	7.5	7.539	8.7	7.3	0.219	0.468	7.3	7.3	8.	8.54
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/19/76-07/15/96	13	0.032	0.029	0.05	0.002	0.	0.018	0.003	0.01	0.05	0.05
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/19/76-07/15/96	14 ##	0.05	0.041	0.1	0.02	0.001	0.023	0.02	0.02	0.05	0.075
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/19/76-07/15/96	14 ##	0.005	0.008	0.03	0.005	0.	0.008	0.005	0.005	0.005	0.025
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/19/76-07/15/96	14	0.3	0.414	1.8	0.1	0.172	0.415	0.15	0.275	0.4	1.2
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/19/76-04/30/96	13	410.	885.385	4900.	100.	1757276.923	1325.623	100.	200.	1000.	3740.
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/19/76-04/30/96	13	2.613	2.653	3.69	2.	0.244	0.494	2.	2.301	2.962	3.535
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			449.265								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

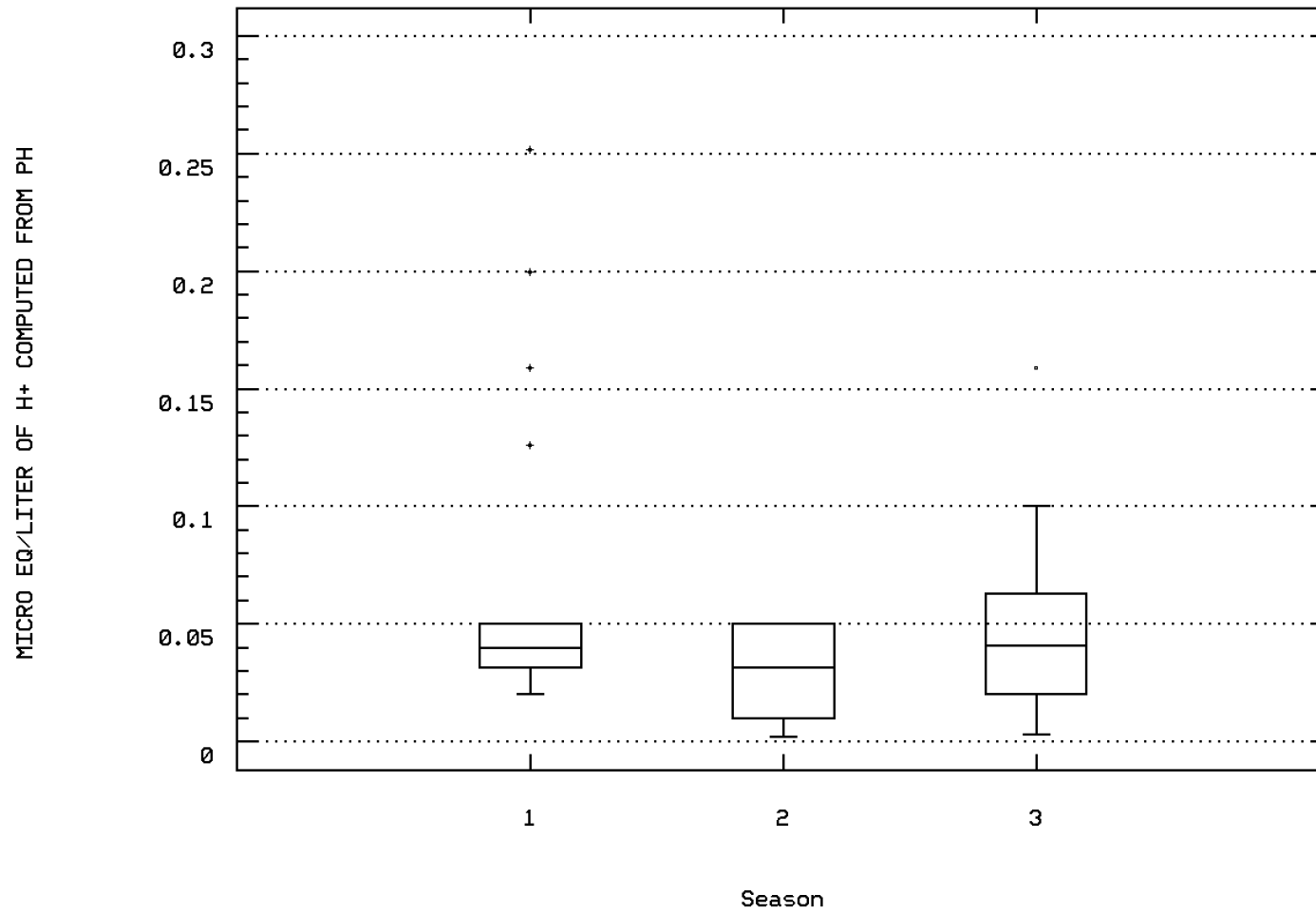
### Seasonal Analysis for Season #3: 7/15 to 9/30 - Station MANA0038

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	04/19/76-07/15/96	10	23.45	22.63	27.	13.8	14.831	3.851	14.27	21.5	25.15	26.89
00400p	PH (STANDARD UNITS)	04/19/76-07/15/96	10	7.4	7.53	8.5	6.8	0.291	0.54	6.82	7.15	7.85	8.48
00400p	CONVERTED PH (STANDARD UNITS)	04/19/76-07/15/96	10	7.389	7.3	8.5	6.8	0.35	0.592	6.82	7.15	7.85	8.48
00400p	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/19/76-07/15/96	10	0.041	0.05	0.158	0.003	0.002	0.048	0.003	0.016	0.072	0.153
00610p	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/19/76-07/15/96	10 ##	0.045	0.046	0.1	0.02	0.001	0.028	0.02	0.02	0.07	0.097
00615p	NITRITE NITROGEN, TOTAL (MG/L AS N)	04/19/76-07/15/96	10	0.01	0.014	0.04	0.005	0.	0.011	0.005	0.005	0.02	0.038
00625p	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/19/76-07/15/96	10	0.5	0.53	0.8	0.3	0.016	0.125	0.32	0.5	0.6	0.78
31616p	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/19/76-04/30/96	8	400.	999.375	3400.	45.	1512074.554	1229.664	**	**	**	**
31616p	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/19/76-04/30/96	8	2.588	2.57	3.531	1.653	0.544	0.737	**	**	**	**
31616p	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	GEOMETRIC MEAN =			371.328								

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding box-and-whisker plot

Station: MANA0038 Parameter Code: 00400

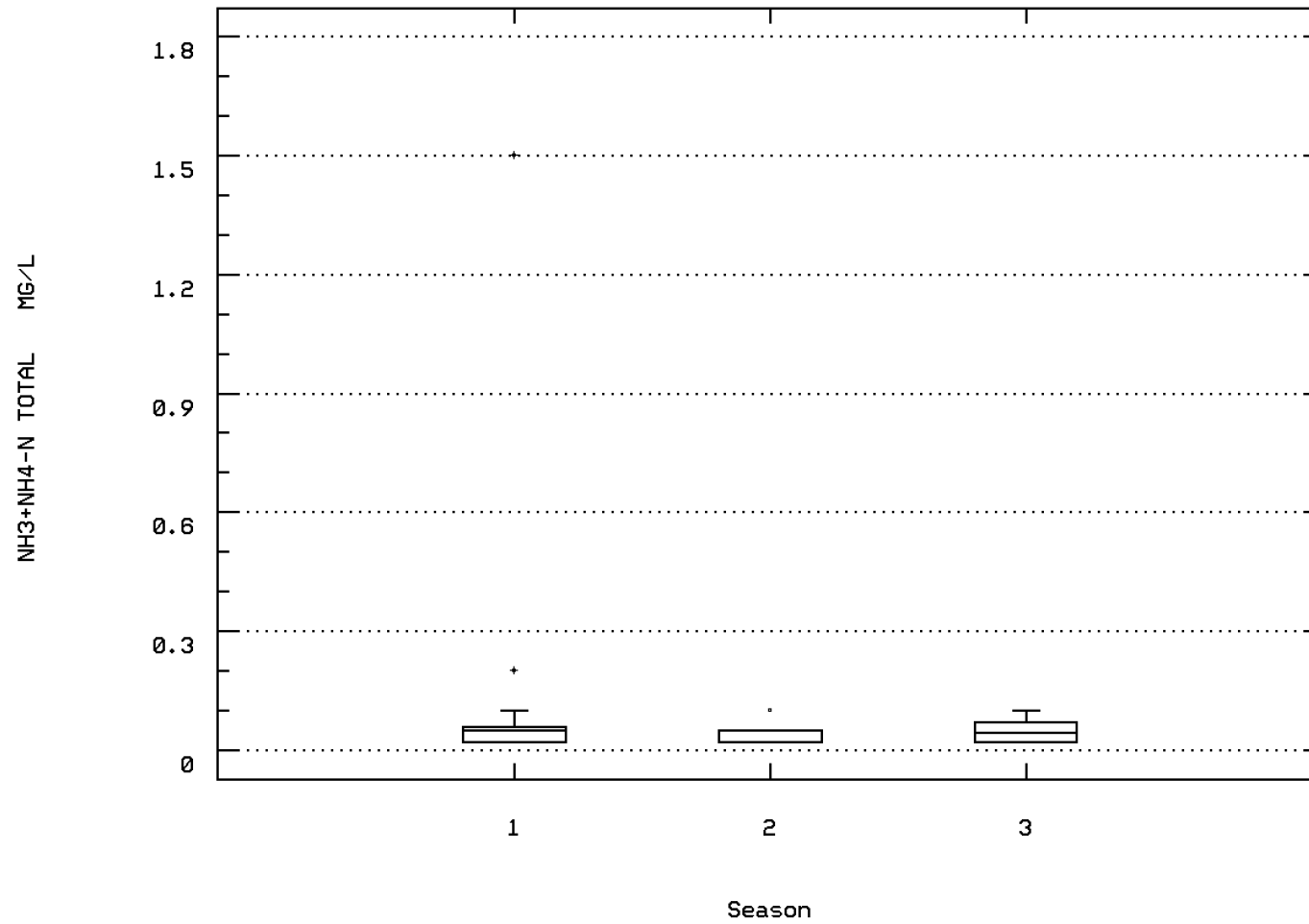
MICRO EQ/LITER OF H+ COMPUTED FROM PH



ROUTE 705 BRIDGE

Station: MANA0038 Parameter Code: 00610

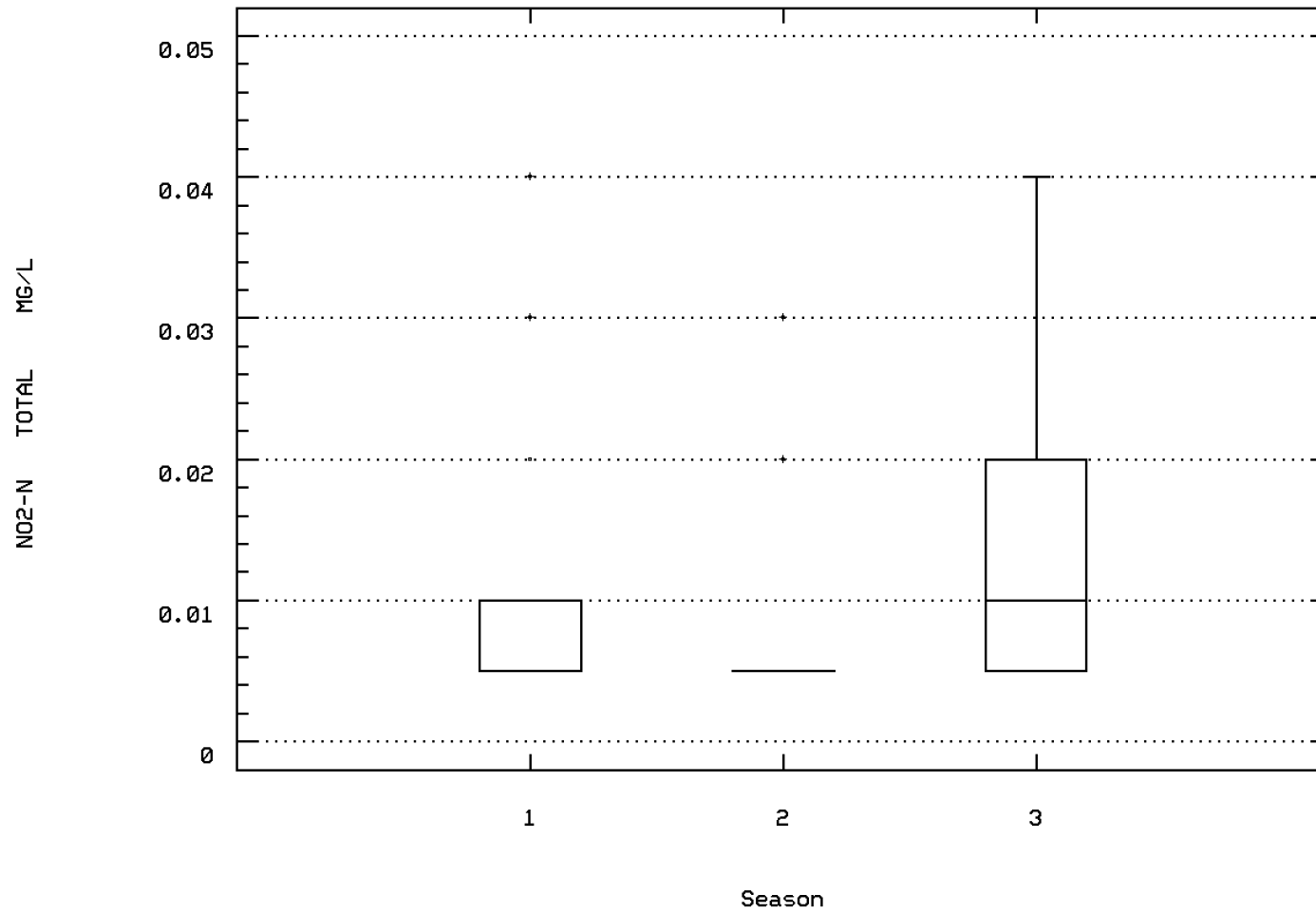
NITROGEN, AMMONIA, TOTAL (MG/L AS N)



ROUTE 705 BRIDGE

Station: MANA0038 Parameter Code: 00615

NITRITE NITROGEN, TOTAL (MG/L AS N)

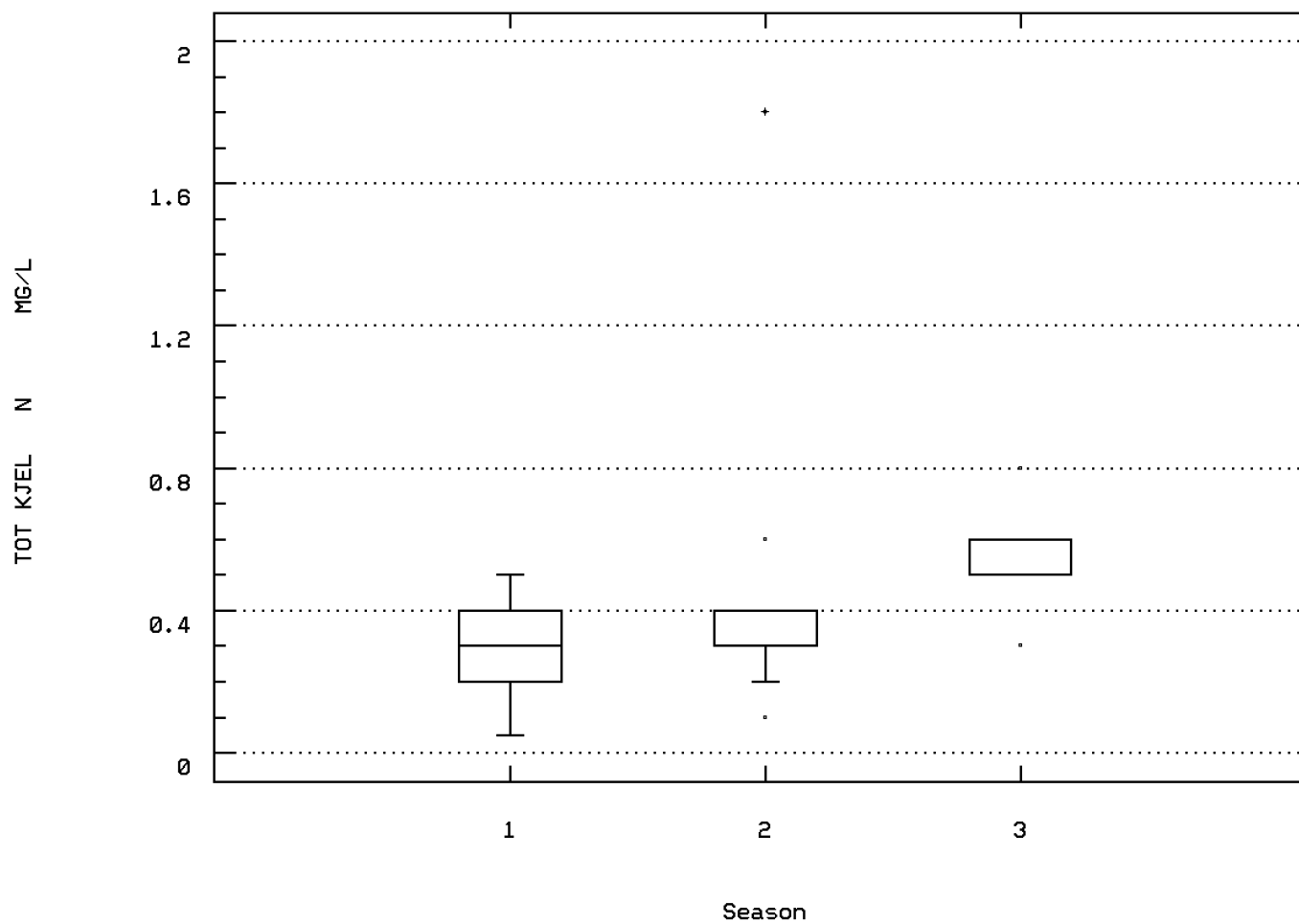


ROUTE 705 BRIDGE



Station: MANA0038 Parameter Code: 00625

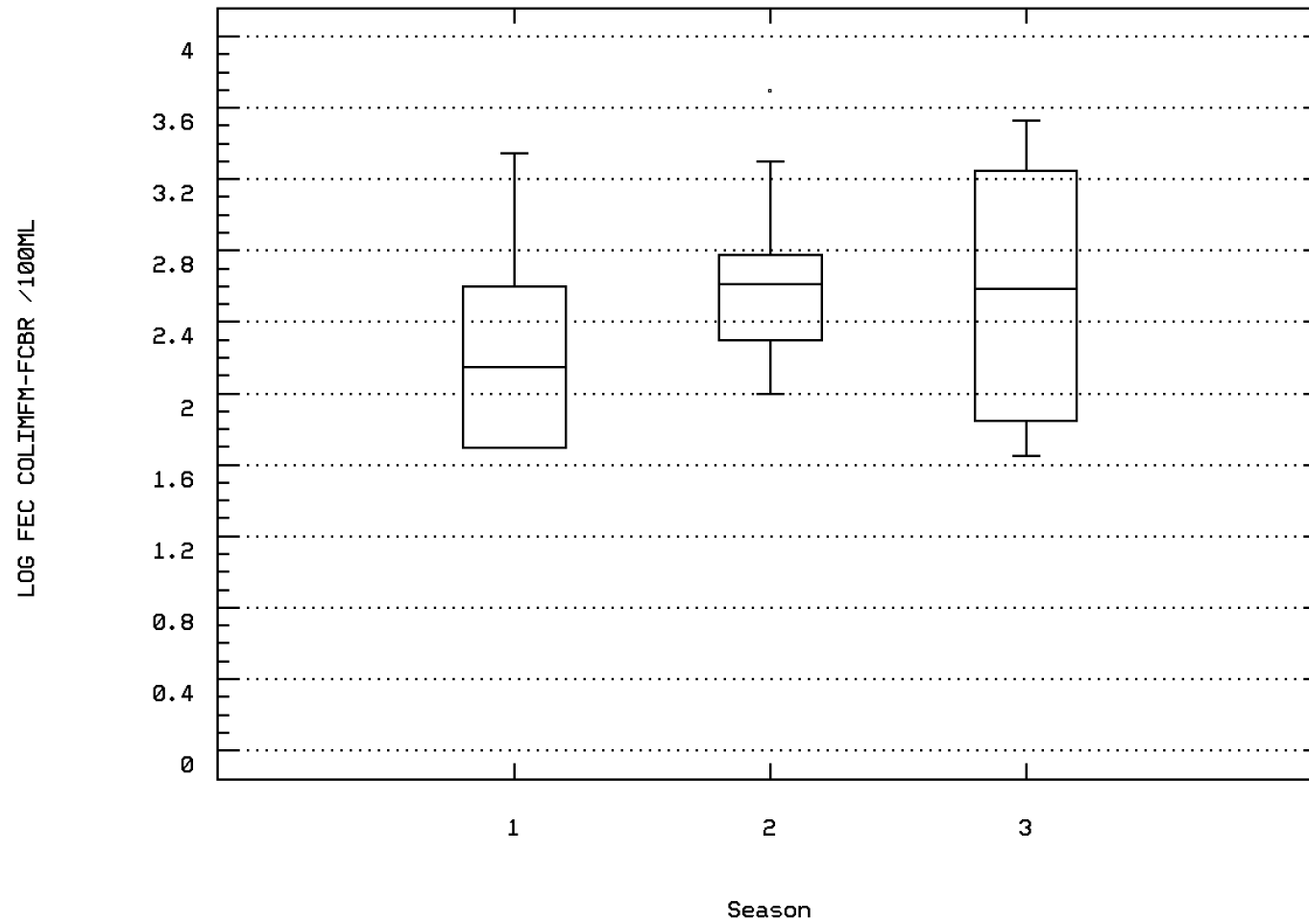
NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)



ROUTE 705 BRIDGE

Station: MANA0038 Parameter Code: 31616

LOG FECAL COLIFORM, MEMBR FILTER, M-FC BR



ROUTE 705 BRIDGE

## Station Inventory for Station: MANA0039

NPS Station ID: MANA0039  
 Location: LICK BRANCH AT CATHARPIN, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin:  
 Minor Basin:  
 RF1 Index: 02070010  
 RF3 Index: 02070010047200.00  
 Description:

LAT/LON: 38.849448/ -77.573337

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 0.78

Agency: 112WRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): 01656743  
 Within Park Boundary: No

Date Created: 01/26/80

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 5.80  
 Distance from RF3: 0.01

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0039

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/28/79-08/28/79	1	22.	22.	22.	22.	0.	0.	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	08/28/79-08/28/79	1	40.	40.	40.	40.	0.	0.	**	**	**	**
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/28/79-08/28/79	1	115.	115.	115.	115.	0.	0.	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	08/28/79-08/28/79	1	8.5	8.5	8.5	8.5	0.	0.	**	**	**	**
00400 PH (STANDARD UNITS)	08/28/79-08/28/79	1	6.3	6.3	6.3	6.3	0.	0.	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	08/28/79-08/28/79	1	6.3	6.3	6.3	6.3	0.	0.	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	08/28/79-08/28/79	1	0.501	0.501	0.501	0.501	0.	0.	**	**	**	**
00405 CARBON DIOXIDE (MG/L AS CO2)	08/28/79-08/28/79	1	32.	32.	32.	32.	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	08/28/79-08/28/79	1	33.	33.	33.	33.	0.	0.	**	**	**	**
00440 BICARBONATE ION (MG/L AS HCO3)	08/28/79-08/28/79	1	40.	40.	40.	40.	0.	0.	**	**	**	**
00445 CARBONATE ION (MG/L AS CO3)	08/28/79-08/28/79	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00613 NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	1	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	1	0.78	0.78	0.78	0.78	0.	0.	**	**	**	**
00631 NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/28/79-08/28/79	1	0.8	0.8	0.8	0.8	0.	0.	**	**	**	**
00660 PHOSPHATE, ORTHO (MG/L AS PO4)	08/28/79-08/28/79	1	0.18	0.18	0.18	0.18	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/28/79-08/28/79	1	0.06	0.06	0.06	0.06	0.	0.	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	08/28/79-08/28/79	1	51.	51.	51.	51.	0.	0.	**	**	**	**
00902 HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/28/79-08/28/79	1	18.	18.	18.	18.	0.	0.	**	**	**	**
00915 CALCIUM, DISSOLVED (MG/L AS Ca)	08/28/79-08/28/79	1	13.	13.	13.	13.	0.	0.	**	**	**	**
00925 MAGNESIUM, DISSOLVED (MG/L AS MG)	08/28/79-08/28/79	1	4.4	4.4	4.4	4.4	0.	0.	**	**	**	**
00930 SODIUM, DISSOLVED (MG/L AS Na)	08/28/79-08/28/79	1	5.4	5.4	5.4	5.4	0.	0.	**	**	**	**
00931 SODIUM ADSORPTION RATIO	08/28/79-08/28/79	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00932 SODIUM, PERCENT	08/28/79-08/28/79	1	18.	18.	18.	18.	0.	0.	**	**	**	**
00933 SODIUM,PLUS POTASSIUM (MG/L)	08/28/79-08/28/79	1	8.3	8.3	8.3	8.3	0.	0.	**	**	**	**
00935 POTASSIUM, DISSOLVED (MG/L AS K)	08/28/79-08/28/79	1	2.9	2.9	2.9	2.9	0.	0.	**	**	**	**
00940 CHLORIDE,TOTAL IN WATER MG/L	08/28/79-08/28/79	1	7.	7.	7.	7.	0.	0.	**	**	**	**
00945 SULFATE, TOTAL (MG/L AS SO4)	08/28/79-08/28/79	1	14.	14.	14.	14.	0.	0.	**	**	**	**
00950 FLUORIDE, DISSOLVED (MG/L AS F)	08/28/79-08/28/79	1	0.1	0.1	0.1	0.1	0.	0.	**	**	**	**
00955 SILICA, DISSOLVED (MG/L AS SiO2)	08/28/79-08/28/79	1	12.	12.	12.	12.	0.	0.	**	**	**	**
01046 IRON, DISSOLVED (UG/L AS FE)	08/28/79-08/28/79	1	220.	220.	220.	220.	0.	0.	**	**	**	**
70300 RESIDUE,TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/28/79-08/28/79	1	92.	92.	92.	92.	0.	0.	**	**	**	**
70301 SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/28/79-08/28/79	1	82.	82.	82.	82.	0.	0.	**	**	**	**
70303 SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/28/79-08/28/79	1	0.13	0.13	0.13	0.13	0.	0.	**	**	**	**
71851 NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/28/79-08/28/79	1	3.5	3.5	3.5	3.5	0.	0.	**	**	**	**
71856 NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/28/79-08/28/79	1	0.03	0.03	0.03	0.03	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0039

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	1	0	0.00							1	0	0.00			
00400 PH	Other-Hi Lim.	9.	1	0	0.00							1	0	0.00			
	Other-Lo Lim.	6.5	1	1	1.00							1	1	1.00			
00613 NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	1	0	0.00							1	0	0.00			
00618 NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	1	0	0.00							1	0	0.00			
00631 NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	1	0	0.00							1	0	0.00			
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	1	0	0.00							1	0	0.00			
	Drinking Water	250.	1	0	0.00							1	0	0.00			
00945 SULFATE, TOTAL (AS SO4)	Drinking Water	250.	1	0	0.00							1	0	0.00			
00950 FLUORIDE, DISSOLVED AS F	Drinking Water	4.	1	0	0.00							1	0	0.00			
71851 NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	1	0	0.00							1	0	0.00			
71856 NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	1	0	0.00							1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0040

NPS Station ID: MANA0040  
 Location: CHESTNUT LICK NEAR CATHARPIN, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin:  
 Minor Basin:  
 RF1 Index: 02070010  
 RF3 Index: 02070010005900.84  
 Description:

LAT/LON: 38.888059/ -77.593616

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 1.77

Agency: 112WRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): 01656715  
 Within Park Boundary: No

Date Created: 01/26/80

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 1.20  
 Distance from RF3: 0.06

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0040

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/28/79-08/28/79	1	23.	23.	23.	23.	0.	0.	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	08/28/79-08/28/79	1	50.	50.	50.	50.	0.	0.	**	**	**	**
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/28/79-08/28/79	1	125.	125.	125.	125.	0.	0.	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	08/28/79-08/28/79	1	8.9	8.9	8.9	8.9	0.	0.	**	**	**	**
00400 PH (STANDARD UNITS)	08/28/79-08/28/79	1	5.4	5.4	5.4	5.4	0.	0.	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	08/28/79-08/28/79	1	5.4	5.4	5.4	5.4	0.	0.	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	08/28/79-08/28/79	1	3.981	3.981	3.981	3.981	0.	0.	**	**	**	**
00405 CARBON DIOXIDE (MG/L AS CO2)	08/28/79-08/28/79	1	261.	261.	261.	261.	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	08/28/79-08/28/79	1	34.	34.	34.	34.	0.	0.	**	**	**	**
00440 BICARBONATE ION (MG/L AS HCO3)	08/28/79-08/28/79	1	41.	41.	41.	41.	0.	0.	**	**	**	**
00445 CARBONATE ION (MG/L AS CO3)	08/28/79-08/28/79	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00613 NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	1	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	1	0.23	0.23	0.23	0.23	0.	0.	**	**	**	**
00631 NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/28/79-08/28/79	1	0.2	0.2	0.2	0.2	0.	0.	**	**	**	**
00660 PHOSPHATE, ORTHO (MG/L AS PO4)	08/28/79-08/28/79	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/28/79-08/28/79	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	08/28/79-08/28/79	1	50.	50.	50.	50.	0.	0.	**	**	**	**
00902 HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/28/79-08/28/79	1	16.	16.	16.	16.	0.	0.	**	**	**	**
00915 CALCIUM, DISSOLVED (MG/L AS Ca)	08/28/79-08/28/79	1	13.	13.	13.	13.	0.	0.	**	**	**	**
00925 MAGNESIUM, DISSOLVED (MG/L AS MG)	08/28/79-08/28/79	1	4.2	4.2	4.2	4.2	0.	0.	**	**	**	**
00930 SODIUM, DISSOLVED (MG/L AS NA)	08/28/79-08/28/79	1	4.9	4.9	4.9	4.9	0.	0.	**	**	**	**
00931 SODIUM ADSORPTION RATIO	08/28/79-08/28/79	1	0.3	0.3	0.3	0.3	0.	0.	**	**	**	**
00932 SODIUM, PERCENT	08/28/79-08/28/79	1	17.	17.	17.	17.	0.	0.	**	**	**	**
00933 SODIUM,PLUS POTASSIUM (MG/L)	08/28/79-08/28/79	1	7.3	7.3	7.3	7.3	0.	0.	**	**	**	**
00935 POTASSIUM, DISSOLVED (MG/L AS K)	08/28/79-08/28/79	1	2.4	2.4	2.4	2.4	0.	0.	**	**	**	**
00940 CHLORIDE,TOTAL IN WATER MG/L	08/28/79-08/28/79	1	5.	5.	5.	5.	0.	0.	**	**	**	**
00945 SULFATE, TOTAL (MG/L AS SO4)	08/28/79-08/28/79	1	11.	11.	11.	11.	0.	0.	**	**	**	**
00950 FLUORIDE, DISSOLVED (MG/L AS F)	08/28/79-08/28/79	1	0.1	0.1	0.1	0.1	0.	0.	**	**	**	**
00955 SILICA, DISSOLVED (MG/L AS SiO2)	08/28/79-08/28/79	1	13.	13.	13.	13.	0.	0.	**	**	**	**
01046 IRON, DISSOLVED (UG/L AS FE)	08/28/79-08/28/79	1	210.	210.	210.	210.	0.	0.	**	**	**	**
70300 RESIDUE,TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/28/79-08/28/79	1	99.	99.	99.	99.	0.	0.	**	**	**	**
70301 SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/28/79-08/28/79	1	75.	75.	75.	75.	0.	0.	**	**	**	**
70303 SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/28/79-08/28/79	1	0.13	0.13	0.13	0.13	0.	0.	**	**	**	**
71851 NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/28/79-08/28/79	1	1.	1.	1.	1.	0.	0.	**	**	**	**
71856 NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/28/79-08/28/79	1	0.03	0.03	0.03	0.03	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0040

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	1	0	0.00							1	0	0.00			
00400 PH	Other-Hi Lim.	9.	1	0	0.00							1	0	0.00			
	Other-Lo Lim.	6.5	1	1	1.00							1	1	1.00			
00613 NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	1	0	0.00							1	0	0.00			
00618 NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	1	0	0.00							1	0	0.00			
00631 NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	1	0	0.00							1	0	0.00			
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	1	0	0.00							1	0	0.00			
	Drinking Water	250.	1	0	0.00							1	0	0.00			
00945 SULFATE, TOTAL (AS SO4)	Drinking Water	250.	1	0	0.00							1	0	0.00			
00950 FLUORIDE, DISSOLVED AS F	Drinking Water	4.	1	0	0.00							1	0	0.00			
71851 NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	1	0	0.00							1	0	0.00			
71856 NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	1	0	0.00							1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0041

NPS Station ID: MANA0041	LAT/LON: 38.830281/ -77.598337	Agency: 21VASWCB	Date Created: 03/13/93
Location: ROUTE 676 (PRINCE WILLIAM CO)		FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM	
Station Type: /TYPA/AMBNT/STREAM		STORET Station ID(s): 1ACAA003.46	
RMI-Indexes:		Within Park Boundary: No	
RMI-Miles:			
HUC: 02070010	Depth of Water: 0	Aquifer:	
Major Basin: 02-NORTH ATLANTIC	Elevation: 0	Water Body Id:	
Minor Basin: 1-POTOMAC-SHENANDOAH		ECO Region:	
RF1 Index: 02070010	RF1 Mile Point: 0.000	Distance from RF1: 0.00	On/Off RF1:
RF3 Index: 02070010059601.50	RF3 Mile Point: 4.50	Distance from RF3: 0.21	On/Off RF3:
Description:			
VIRGINIA STATE WATER CONTROL BOARD	AMBIENT MONITORING	BASIN: 1A POTOMAC	REGION: 3 NORTHERN
RIVER: CATHARPIN CREEK	SECTION: 07A	TOPO MAP #: 0027	TOPO MAP NAME: GAINSVILLE, VA

### Parameter Inventory for Station: MANA0041

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00300 OXYGEN, DISSOLVED MG/L	04/29/75-04/29/75	1	13.	13.	13.	13.	0.	0.	**	**	**	**
00310 BOD, 5 DAY, 20 DEG C MG/L	04/29/75-04/29/75	1	2.	2.	2.	2.	0.	0.	**	**	**	**
00340 COD, .25N K2CR2O7 MG/L	04/29/75-08/02/94	2	8.	8.	12.	4.	32.	5.657	**	**	**	**
00400 PH (STANDARD UNITS)	04/29/75-04/29/75	1	7.5	7.5	7.5	7.5	0.	0.	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	04/29/75-04/29/75	1	7.5	7.5	7.5	7.5	0.	0.	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/29/75-04/29/75	1	0.032	0.032	0.032	0.032	0.	0.	**	**	**	**
00403 PH, LAB, STANDARD UNITS SU	04/29/75-04/29/75	1	6.5	6.5	6.5	6.5	0.	0.	**	**	**	**
00403 CONVERTED PH, LAB, STANDARD UNITS	04/29/75-04/29/75	1	6.5	6.5	6.5	6.5	0.	0.	**	**	**	**
00403 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/29/75-04/29/75	1	0.316	0.316	0.316	0.316	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	04/29/75-04/29/75	1	21.	21.	21.	21.	0.	0.	**	**	**	**
00500 RESIDUE, TOTAL (MG/L)	04/29/75-04/29/75	1	98.	98.	98.	98.	0.	0.	**	**	**	**
00505 RESIDUE, TOTAL VOLATILE (MG/L)	04/29/75-04/29/75	1	64.	64.	64.	64.	0.	0.	**	**	**	**
00510 RESIDUE, TOTAL FIXED (MG/L)	04/29/75-04/29/75	1	34.	34.	34.	34.	0.	0.	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/29/75-04/29/75	1	8.	8.	8.	8.	0.	0.	**	**	**	**
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/29/75-04/29/75	1	4.	4.	4.	4.	0.	0.	**	**	**	**
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	04/29/75-04/29/75	1	4.	4.	4.	4.	0.	0.	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/29/75-08/02/94	2 ##	0.035	0.035	0.05	0.02	0.	0.021	**	**	**	**
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	04/29/75-08/02/94	2 ##	0.013	0.013	0.02	0.005	0.	0.011	**	**	**	**
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	04/29/75-08/02/94	2	0.215	0.215	0.35	0.08	0.036	0.191	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/29/75-08/02/94	2	0.25	0.25	0.4	0.1	0.045	0.212	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	04/29/75-08/02/94	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	04/29/75-04/29/75	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	04/29/75-08/02/94	2	6.3	6.3	8.	4.6	5.78	2.404	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	08/02/94-08/02/94	1	36.	36.	36.	36.	0.	0.	**	**	**	**
00940 CHLORIDE, TOTAL IN WATER MG/L	04/29/75-04/29/75	1	3.	3.	3.	3.	0.	0.	**	**	**	**
01002 ARSENIC, TOTAL (UG/L AS AS)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
01003 ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
01012 BERYLLIUM, TOTAL (UG/L AS BE)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
01013 BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
01027 CADMIUM, TOTAL (UG/L AS CD)	08/02/94-08/02/94	1 ##	1.5	1.5	1.5	1.5	0.	0.	**	**	**	**
01028 CADMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
01029 CHROMIUM, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	08/02/94-08/02/94	1	27.	27.	27.	27.	0.	0.	**	**	**	**
01034 CHROMIUM, TOTAL (UG/L AS CR)	08/02/94-08/02/94	1	13.	13.	13.	13.	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0041

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
01042	COPPER, TOTAL (UG/L AS CU)	08/02/94-08/02/94	1 ##	5.	5.	5.	5.	0.	0.	**	**	**
01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	08/02/94-08/02/94	1	20.	20.	20.	20.	0.	0.	**	**	**
01045	IRON, TOTAL (UG/L AS FE)	08/02/94-08/02/94	1	980.	980.	980.	980.	0.	0.	**	**	**
01051	LEAD, TOTAL (UG/L AS PB)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**
01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	08/02/94-08/02/94	1	13.	13.	13.	13.	0.	0.	**	**	**
01053	MANGANESE IN BOTTOM DEPOSITS (MG/KG AS MN DRY WGT)	08/02/94-08/02/94	1	1316.	1316.	1316.	1316.	0.	0.	**	**	**
01055	MANGANESE, TOTAL (UG/L AS MN)	08/02/94-08/02/94	1	95.	95.	95.	95.	0.	0.	**	**	**
01059	THALLIUM, TOTAL (UG/L AS TL)	08/02/94-08/02/94	1 ##	5.	5.	5.	5.	0.	0.	**	**	**
01067	NICKEL, TOTAL (UG/L AS NI)	08/02/94-08/02/94	1 ##	5.	5.	5.	5.	0.	0.	**	**	**
01068	NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG, DRY WGT)	08/02/94-08/02/94	1	19.	19.	19.	19.	0.	0.	**	**	**
01077	SILVER, TOTAL (UG/L AS AG)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**
01078	SILVER IN BOTTOM DEPOSITS (MG/KG AS AG DRY WGT)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**
01092	ZINC, TOTAL (UG/L AS ZN)	08/02/94-08/02/94	1 ##	5.	5.	5.	5.	0.	0.	**	**	**
01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	08/02/94-08/02/94	1	51.	51.	51.	51.	0.	0.	**	**	**
01097	ANTIMONY, TOTAL (UG/L AS SB)	08/02/94-08/02/94	1 ##	5.	5.	5.	5.	0.	0.	**	**	**
01147	SELENIUM, TOTAL (UG/L AS SE)	08/02/94-08/02/94	1 ##	5.	5.	5.	5.	0.	0.	**	**	**
01148	SELENIUM IN BOTTOM DEPOSITS (MG/KG AS SE DRY WGT)	08/02/94-08/02/94	1 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**
01170	IRON IN BOTTOM DEPOSITS (MG/KG AS FE DRY WGT)	08/02/94-08/02/94	1	27828.	27828.	27828.	27828.	0.	0.	**	**	**
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/29/75-08/02/94	2	350.	350.	400.	300.	5000.	70.711	**	**	**
31616	LOG FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/29/75-08/02/94	2	2.54	2.54	2.602	2.477	0.008	0.088	**	**	**
31616	GM FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	04/29/75-08/02/94	2	2.54	2.54	2.602	2.477	0.008	0.088	**	**	**
34480	THALLIUM DRY WGT BOT MG/KG	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**
46570	HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	08/02/94-08/02/94	1	33.	33.	33.	33.	0.	0.	**	**	**
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	08/02/94-08/02/94	1	0.02	0.02	0.02	0.02	0.	0.	**	**	**
71900	MERCURY, TOTAL (UG/L AS HG)	08/02/94-08/02/94	1 ##	0.15	0.15	0.15	0.15	0.	0.	**	**	**
71921	MERCURY, TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	08/02/94-08/02/94	1 ##	0.15	0.15	0.15	0.15	0.	0.	**	**	**
82033	MAGNESIUM - TOTAL UG/L (AS MG)	08/02/94-08/02/94	1	3000.	3000.	3000.	3000.	0.	0.	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0041

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300	OXYGEN, DISSOLVED	Other-Lo Lim.	4.	1	0	0.00			1	0	0.00						
00400	PH	Other-Hi Lim.	9.	1	0	0.00			1	0	0.00						
		Other-Lo Lim.	6.5	1	0	0.00			1	0	0.00						
00403	PH, LAB	Other-Hi Lim.	9.	1	0	0.00			1	0	0.00						
		Other-Lo Lim.	6.5	1	1	1.00			1	1	1.00						
00615	NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	2	0	0.00			1	0	0.00	1	0	0.00			
00620	NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	2	0	0.00			1	0	0.00	1	0	0.00			
00940	CHLORIDE, TOTAL IN WATER	Fresh Acute	860.	1	0	0.00			1	0	0.00						
		Drinking Water	250.	1	0	0.00			1	0	0.00						
01002	ARSENIC, TOTAL	Fresh Acute	360.	1	0	0.00						1	0	0.00			
		Drinking Water	50.	1	0	0.00						1	0	0.00			
01012	BERYLLIUM, TOTAL	Fresh Acute	130.	1	0	0.00						1	0	0.00			
		Drinking Water	4.	1	0	0.00						1	0	0.00			
01027	CADMIUM, TOTAL	Fresh Acute	3.9	1	0	0.00						1	0	0.00			
		Drinking Water	5.	1	0	0.00						1	0	0.00			
01034	CHROMIUM, TOTAL	Drinking Water	100.	1	0	0.00						1	0	0.00			
01042	COPPER, TOTAL	Fresh Acute	18.	1	0	0.00						1	0	0.00			
		Drinking Water	1300.	1	0	0.00						1	0	0.00			
01051	LEAD, TOTAL	Fresh Acute	82.	1	0	0.00						1	0	0.00			
		Drinking Water	15.	1	0	0.00						1	0	0.00			
01059	THALLIUM, TOTAL	Fresh Acute	1400.	1	0	0.00						1	0	0.00			
		Drinking Water	2.	0 &	0	0.00											
01067	NICKEL, TOTAL	Fresh Acute	1400.	1	0	0.00						1	0	0.00			
		Drinking Water	100.	1	0	0.00						1	0	0.00			
01077	SILVER, TOTAL	Fresh Acute	4.1	1	0	0.00						1	0	0.00			
		Drinking Water	100.	1	0	0.00						1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter



### EPA Water Quality Criteria Analysis for Station: MANA0041

Parameter	Std. Type	Std. Value	Total			-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
			Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
01092 ZINC, TOTAL	Fresh Acute	120.	1	0	0.00							1	0	0.00			
	Drinking Water	5000.	1	0	0.00							1	0	0.00			
01097 ANTIMONY, TOTAL	Fresh Acute	88.	1	0	0.00							1	0	0.00			
	Drinking Water	6.	1	0	0.00							1	0	0.00			
01147 SELENIUM, TOTAL	Fresh Acute	20.	1	0	0.00							1	0	0.00			
	Drinking Water	50.	1	0	0.00							1	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	2	2	1.00				1	1	1.00	1	1	1.00			
71900 MERCURY, TOTAL	Fresh Acute	2.4	1	0	0.00							1	0	0.00			
	Drinking Water	2.	1	0	0.00							1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0042

NPS Station ID: MANA0042  
 Location: 51CB05, PASTURELAND IN NW PRINCE WILLIAM CO  
 Station Type: /CANAL/TYPA/AMBNT  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC RIVER  
 RF1 Index: 02070010  
 RF3 Index: 02070010004602.61  
 Description:  
 00.0 790515

LAT/LON: 38.886116/-77.600004

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 2.60

Agency: CHESBAY  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): XGM3260  
 Within Park Boundary: No

Date Created: 01/31/81

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.33

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0042

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00340 COD, 25N K2CR2O7 MG/L	05/31/79-02/11/81	8	56.5	75.	162.	29.	2487.429	49.874	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	05/31/79-02/11/81	36	40.	208.311	1690.	0.4	190552.232	436.523	1.7	6.	152.5	856.4
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	05/31/79-02/11/81	36	0.16	0.215	0.72	0.05	0.026	0.161	0.09	0.125	0.255	0.436
00623 NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	05/31/79-05/05/80	33	0.89	0.932	1.68	0.39	0.117	0.342	0.456	0.665	1.14	1.472
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	05/31/79-05/05/80	33	1.45	2.048	8.49	0.39	3.654	1.912	0.518	0.945	2.245	5.474
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	05/31/79-02/11/81	36	0.205	0.282	0.91	0.01	0.044	0.209	0.07	0.14	0.4	0.592
00665 PHOSPHORUS, TOTAL (MG/L AS P)	05/31/79-02/11/81	32	0.205	0.408	2.35	0.03	0.329	0.573	0.043	0.073	0.518	1.377
00666 PHOSPHORUS, DISSOLVED (MG/L AS P)	05/31/79-02/11/81	32	0.07	0.093	0.36	0.02	0.007	0.083	0.03	0.043	0.1	0.23
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	05/31/79-02/11/81	36	0.02	0.044	0.18	0.	0.003	0.051	0.	0.01	0.07	0.123
01049 LEAD, DISSOLVED (UG/L AS PB)	08/06/79-01/28/80	7	0.	0.	0.	0.	0.	0.	**	**	**	**
01051 LEAD, TOTAL (UG/L AS PB)	08/06/79-01/28/80	7	0.	0.	0.	0.	0.	0.	**	**	**	**
01090 ZINC, DISSOLVED (UG/L AS ZN)	08/06/79-01/28/80	7	0.	1.429	10.	0.	14.286	3.78	**	**	**	**
01092 ZINC, TOTAL (UG/L AS ZN)	08/06/79-01/28/80	7	0.	7.857	30.	0.	132.143	11.495	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

## EPA Water Quality Criteria Analysis for Station: MANA0042

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	36	0	0.00	11	0	0.00	20	0	0.00	5	0	0.00			
01049 LEAD, DISSOLVED	Fresh Acute	82.	7	0	0.00	4	0	0.00				3	0	0.00			
	Drinking Water	15.	7	0	0.00	4	0	0.00				3	0	0.00			
01051 LEAD, TOTAL	Fresh Acute	82.	7	0	0.00	4	0	0.00				3	0	0.00			
	Drinking Water	15.	7	0	0.00	4	0	0.00				3	0	0.00			
01090 ZINC, DISSOLVED	Fresh Acute	120.	7	0	0.00	4	0	0.00				3	0	0.00			
	Drinking Water	5000.	7	0	0.00	4	0	0.00				3	0	0.00			
01092 ZINC, TOTAL	Fresh Acute	120.	7	0	0.00	4	0	0.00				3	0	0.00			
	Drinking Water	5000.	7	0	0.00	4	0	0.00				3	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0043

NPS Station ID: MANA0043  
 Location: 51CB05, PASTURELAND IN NW PRINCE WILLIAM CO  
 Station Type: /CANAL/TYPA/AMBNT  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC RIVER  
 RF1 Index: 02070010  
 RF3 Index: 02070010047800.00  
 Description:  
 00.0 790515

LAT/LON: 38.886116/-77.602782

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 0.33

Agency: CHESBAY  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): XGM3262 /Y4306000  
 Within Park Boundary: No

Date Created: 01/26/80

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 18.60  
 Distance from RF3: 0.41

On/Off RF1:  
 On/Off RF3:

### Parameter Inventory for Station: MANA0043

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00340 COD, 25N K2CR2O7 MG/L	05/31/79-01/19/80	6	44.	50.	81.	29.	424.8	20.611	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	05/31/79-05/05/80	34	21.5	213.065	1690.	0.4	201670.741	449.078	1.5	5.75	159.25	1026.
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	05/31/79-05/05/80	34	0.16	0.189	0.72	0.05	0.014	0.119	0.09	0.115	0.24	0.28
00623 NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	05/31/79-05/05/80	33	0.89	0.932	1.68	0.39	0.117	0.342	0.456	0.665	1.14	1.472
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	05/31/79-05/05/80	33	1.45	2.048	8.49	0.39	3.654	1.912	0.518	0.945	2.245	5.474
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	05/31/79-05/05/80	34	0.195	0.268	0.91	0.01	0.043	0.207	0.07	0.13	0.325	0.605
00665 PHOSPHORUS, TOTAL (MG/L AS P)	05/31/79-05/05/80	30	0.19	0.39	2.35	0.03	0.346	0.588	0.041	0.068	0.368	1.539
00666 PHOSPHORUS, DISSOLVED (MG/L AS P)	05/31/79-05/05/80	30	0.065	0.075	0.26	0.02	0.002	0.048	0.03	0.04	0.093	0.129
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	05/31/79-05/05/80	34	0.02	0.036	0.13	0.	0.002	0.04	0.	0.01	0.063	0.115
01049 LEAD, DISSOLVED (UG/L AS PB)	08/06/79-01/28/80	7	0.	0.	0.	0.	0.	0.	**	**	**	**
01051 LEAD, TOTAL (UG/L AS PB)	08/06/79-01/28/80	7	0.	0.	0.	0.	0.	0.	**	**	**	**
01090 ZINC, DISSOLVED (UG/L AS ZN)	08/06/79-01/28/80	7	0.	1.429	10.	0.	14.286	3.78	**	**	**	**
01092 ZINC, TOTAL (UG/L AS ZN)	08/06/79-01/28/80	7	0.	7.857	30.	0.	132.143	11.495	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0043

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	34	0	0.00	9	0	0.00	20	0	0.00	5	0	0.00			
01049 LEAD, DISSOLVED	Fresh Acute	82.	7	0	0.00	4	0	0.00				3	0	0.00			
	Drinking Water	15.	7	0	0.00	4	0	0.00				3	0	0.00			
01051 LEAD, TOTAL	Fresh Acute	82.	7	0	0.00	4	0	0.00				3	0	0.00			
	Drinking Water	15.	7	0	0.00	4	0	0.00				3	0	0.00			
01090 ZINC, DISSOLVED	Fresh Acute	120.	7	0	0.00	4	0	0.00				3	0	0.00			
	Drinking Water	5000.	7	0	0.00	4	0	0.00				3	0	0.00			
01092 ZINC, TOTAL	Fresh Acute	120.	7	0	0.00	4	0	0.00				3	0	0.00			
	Drinking Water	5000.	7	0	0.00	4	0	0.00				3	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

Station Inventory for Station: MANA0044

NPS Station ID: MANA0044

Location: RT. 676

Station Type: /TYPA/AMBNT/STREAM

RMI-Indexes:

RMI-Miles:

HUC: 02070010

Major Basin: 02-NORTH ATLANTIC

Minor Basin: 1-POTOMAC-SHENANDOAH

RF1 Index: 02070010

RF3 Index: 02070010059601.50

Description:

VIRGINIA STATE WATER CONTROL BOARD

RIVER: LITTLE BULL RUN

LAT/LON: 38.815004/ -77.610559

Depth of Water: 0

Elevation: 0

RF1 Mile Point: 0.000

RF3 Mile Point: 4.50

AMBIENT MONITORING

SECTION: 07A

TOPO MAP #: 0027

Agency: 21VASWCB

FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM

STORET Station ID(s): 1ALI006.75

Within Park Boundary: No

Aquifer:

Water Body Id:

ECO Region:

Distance from RF1: 0.00

Distance from RF3: 0.21

REGION: 3 NORTHERN

TOPO MAP NAME: GAINESVILLE, VA

Date Created: 01/13/96

On/Off RF1:

On/Off RF3:

Parameter Inventory for Station: MANA0044

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
***** No Parameter Data Available for this Station *****												

## Station Inventory for Station: MANA0045

NPS Station ID: MANA0045  
 Location: 51CB04, DISCHARGE FROM FARM POND  
 Station Type: /CANAL/TYPA/AMBNT  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC RIVER  
 RF1 Index: 02070010  
 RF3 Index: 02070010047800.00  
 Description:  
 00.0 790515

LAT/LON: 38.877781/-77.611115

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 0.33

Agency: CHESBAY  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): XGM2767  
 Within Park Boundary: No

Date Created: 01/26/80

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 18.20  
 Distance from RF3: 0.55

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0045

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00340 COD, .25N K2CR2O7 MG/L	05/25/79-01/22/80	12	58.5	45.833	71.	9.	631.788	25.135	11.4	20.	68.	71.
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	05/25/79-06/16/80	57	28.	59.158	372.	1.	5122.171	71.569	4.	14.	86.5	170.6
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	05/25/79-06/16/80	57	0.24	0.57	2.39	0.05	0.5	0.707	0.07	0.095	0.735	2.266
00623 NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	05/25/79-06/16/80	57	1.22	1.502	4.32	0.28	1.26	1.122	0.384	0.585	1.92	3.658
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	05/25/79-06/16/80	57	2.18	2.604	7.65	0.32	3.796	1.948	0.524	0.845	3.95	5.672
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	05/25/79-06/16/80	57	0.88	1.385	7.99	0.1	1.788	1.337	0.28	0.43	2.	3.212
00665 PHOSPHORUS, TOTAL (MG/L AS P)	05/25/79-06/16/80	56	0.16	0.223	0.95	0.05	0.032	0.18	0.06	0.093	0.315	0.45
00666 PHOSPHORUS, DISSOLVED (MG/L AS P)	05/25/79-06/16/80	56	0.07	0.077	0.25	0.02	0.002	0.043	0.04	0.043	0.098	0.14
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	05/25/79-06/16/80	57	0.02	0.028	0.09	0.	0.001	0.023	0.	0.01	0.04	0.062
01049 LEAD, DISSOLVED (UG/L AS PB)	06/18/79-02/11/80	31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
01051 LEAD, TOTAL (UG/L AS PB)	06/18/79-02/11/80	31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
01090 ZINC, DISSOLVED (UG/L AS ZN)	06/18/79-02/11/80	29	0.	7.931	115.	0.	586.638	24.221	0.	0.	0.	40.
01092 ZINC, TOTAL (UG/L AS ZN)	06/18/79-02/11/80	30	0.	12.167	135.	0.	894.282	29.905	0.	0.	2.5	58.5

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

## EPA Water Quality Criteria Analysis for Station: MANA0045

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
			Obs			Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	57	0	0.00	19	0	0.00	21	0	0.00	17	0	0.00			
01049 LEAD, DISSOLVED	Fresh Acute	82.	31	0	0.00	17	0	0.00	3	0	0.00	11	0	0.00			
	Drinking Water	15.	31	0	0.00	17	0	0.00	3	0	0.00	11	0	0.00			
01051 LEAD, TOTAL	Fresh Acute	82.	31	0	0.00	17	0	0.00	3	0	0.00	11	0	0.00			
	Drinking Water	15.	31	0	0.00	17	0	0.00	3	0	0.00	11	0	0.00			
01090 ZINC, DISSOLVED	Fresh Acute	120.	29	0	0.00	17	0	0.00	3	0	0.00	9	0	0.00			
	Drinking Water	5000.	29	0	0.00	17	0	0.00	3	0	0.00	9	0	0.00			
01092 ZINC, TOTAL	Fresh Acute	120.	30	1	0.03	17	1	0.06	3	0	0.00	10	0	0.00			
	Drinking Water	5000.	30	0	0.00	17	0	0.00	3	0	0.00	10	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

Station Inventory for Station: MANA0046

NPS Station ID: MANA0046

Location: 51CB03, PASTURELAND IN NW PRINCE WILLIAM CO

Station Type: /CANAL/TYPA/AMBNT

RMI-Indexes:

RMI-Miles:

HUC: 02070010

Major Basin: NORTH ATLANTIC

Minor Basin: POTOMAC RIVER

RF1 Index: 02070010

RF3 Index: 02070010004602.60

Description:

00.0 790515

LAT/LON: 38.877781/ -77.613893

Depth of Water: 0

Elevation: 0

RF1 Mile Point: 0.000

RF3 Mile Point: 2.59

Agency: CHESBAY

FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM

STORET Station ID(s): XGM2668

Within Park Boundary: No

Aquifer:

Water Body Id:

ECO Region:

Distance from RF1: 0.00

Distance from RF3: 0.01

Date Created: 01/26/80

On/Off RF1:

On/Off RF3:

Parameter Inventory for Station: MANA0046

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00340	COD, 25N K2CR2O7 MG/L	09/05/79-04/09/80	6	136.	139.833	257.	44.	8084.167	89.912	**	**	**
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	09/05/79-06/16/80	13	14.	32.308	176.	2.	2222.731	47.146	2.	3.	46.
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	09/05/79-06/16/80	13	0.36	0.793	2.73	0.04	0.782	0.885	0.048	0.12	1.63
00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	09/05/79-06/16/80	11	1.77	2.285	7.12	0.22	4.565	2.137	0.234	0.3	3.74
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	09/05/79-06/16/80	11	1.93	2.955	8.68	0.29	6.965	2.639	0.316	0.46	4.24
00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	09/05/79-06/16/80	13	0.39	0.874	2.06	0.14	0.583	0.763	0.172	0.27	1.76
00665	PHOSPHORUS, TOTAL (MG/L AS P)	09/05/79-06/16/80	10	0.57	0.714	1.86	0.04	0.468	0.684	0.041	0.065	1.303
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	09/05/79-06/16/80	11	0.58	0.605	1.5	0.01	0.297	0.545	0.014	0.07	0.95
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	09/05/79-06/16/80	13	0.42	0.404	1.1	0.01	0.137	0.37	0.014	0.025	0.665

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

EPA Water Quality Criteria Analysis for Station: MANA0046

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----			
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	
00630	NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	13	0	0.00				10	0	0.00	3	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0047

NPS Station ID: MANA0047  
 Location: 51CB02, CROPLAND IN NW PRINCE WILLIAM CO  
 Station Type: /CANAL/TYPA/AMBNT  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC RIVER  
 RF1 Index: 02070010  
 RF3 Index: 02070010048100.00  
 Description:  
 00.0 790515

LAT/LON: 38.877781/-77.613893

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 2.44

Agency: CHESBAY  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): XGM2768  
 Within Park Boundary: No

Date Created: 01/26/80

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 17.30  
 Distance from RF3: 0.50

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0047

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00340 COD, 25N K2CR2O7 MG/L	05/25/79-02/11/81	31	36.	60.355	343.	0.	4223.437	64.988	13.	20.	86.	118.
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	05/25/79-03/09/81	88	18.	144.403	1980.	0.	87905.636	296.489	1.	3.25	122.5	540.1
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	05/25/79-03/09/81	88	0.08	0.139	0.85	0.01	0.023	0.152	0.03	0.053	0.17	0.3
00623 NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	05/31/79-03/09/81	83	0.46	0.735	3.76	0.08	0.451	0.672	0.25	0.38	0.92	1.308
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	05/25/79-03/09/81	83	0.7	1.504	8.65	0.17	2.654	1.629	0.33	0.48	1.93	3.922
00630 NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	05/25/79-03/09/81	87	3.62	4.507	16.63	0.03	10.224	3.197	1.318	2.6	5.61	8.922
00665 PHOSPHORUS, TOTAL (MG/L AS P)	05/25/79-03/09/81	82	0.085	0.316	2.55	0.	0.257	0.507	0.04	0.04	0.298	1.005
00666 PHOSPHORUS, DISSOLVED (MG/L AS P)	05/25/79-03/09/81	83	0.04	0.087	0.77	0.	0.014	0.117	0.02	0.03	0.09	0.228
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	05/25/79-03/09/81	88	0.01	0.053	0.69	0.	0.011	0.103	0.	0.01	0.058	0.152
01049 LEAD, DISSOLVED (UG/L AS PB)	06/18/79-02/11/80	31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
01051 LEAD, TOTAL (UG/L AS PB)	06/18/79-02/11/80	31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
01090 ZINC, DISSOLVED (UG/L AS ZN)	06/18/79-02/11/80	29	0.	6.034	55.	0.	227.463	15.082	0.	0.	0.	30.
01092 ZINC, TOTAL (UG/L AS ZN)	06/18/79-02/11/80	30	0.	24.5	235.	0.	2621.293	51.199	0.	0.	31.25	84.5

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

## EPA Water Quality Criteria Analysis for Station: MANA0047

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00630 NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	87	6	0.07	25	6	0.24	28	0	0.00	34	0	0.00			
01049 LEAD, DISSOLVED	Fresh Acute	82.	31	0	0.00	17	0	0.00	3	0	0.00	11	0	0.00			
	Drinking Water	15.	31	0	0.00	17	0	0.00	3	0	0.00	11	0	0.00			
01051 LEAD, TOTAL	Fresh Acute	82.	31	0	0.00	17	0	0.00	3	0	0.00	11	0	0.00			
	Drinking Water	15.	31	0	0.00	17	0	0.00	3	0	0.00	11	0	0.00			
01090 ZINC, DISSOLVED	Fresh Acute	120.	29	0	0.00	17	0	0.00	3	0	0.00	9	0	0.00			
	Drinking Water	5000.	29	0	0.00	17	0	0.00	3	0	0.00	9	0	0.00			
01092 ZINC, TOTAL	Fresh Acute	120.	30	2	0.07	17	1	0.06	3	0	0.00	10	1	0.10			
	Drinking Water	5000.	30	0	0.00	17	0	0.00	3	0	0.00	10	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0048

NPS Station ID: MANA0048  
 Location: 51CB01, PASTURELAND IN NW PRINCE WILLIAM CO  
 Station Type: /CANAL/TYPA/AMBNT  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: NORTH ATLANTIC  
 Minor Basin: POTOMAC RIVER  
 RF1 Index: 02070010  
 RF3 Index: 02070010047800.00  
 Description:  
 00.0 790515

LAT/LON: 38.879170/ -77.616670

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 0.33

Agency: CHESBAY  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): XGM2870  
 Within Park Boundary: No

Date Created: 01/26/80

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 18.20  
 Distance from RF3: 0.55

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0048

Parameter		Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00340	COD, 25N K2CR2O7 MG/L	05/23/79-02/11/81	92	64.	103.685	493.	0.	13142.372	114.64	7.3	20.5	155.5	305.1
00403	PH, LAB, STANDARD UNITS SU	01/06/80-12/01/80	35	3.8	3.86	4.9	3.2	0.21	0.458	3.4	3.5	4.	4.68
00403	CONVERTED PH, LAB, STANDARD UNITS	01/06/80-12/01/80	35	3.8	3.689	4.9	3.2	0.24	0.49	3.4	3.5	4.	4.68
00403	MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	01/06/80-12/01/80	35	158.489	204.648	630.957	12.589	23211.984	152.355	21.411	100.	316.228	398.107
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	05/23/79-05/18/81	177	12.	310.329	4140.	0.	464290.581	681.389	1.8	4.	199.5	1053.6
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	05/23/79-05/18/81	189	0.14	0.359	3.21	0.02	0.387	0.622	0.04	0.06	0.34	0.9
00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	05/23/79-05/18/81	171	0.58	1.001	6.88	0.04	1.59	1.261	0.232	0.32	1.11	2.2
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	05/23/79-05/18/81	174	0.655	2.305	20.7	0.11	11.775	3.431	0.29	0.39	2.485	7.51
00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	05/23/79-05/18/81	188	1.525	1.88	6.94	0.13	1.579	1.256	0.457	0.97	2.51	3.783
00665	PHOSPHORUS, TOTAL (MG/L AS P)	05/23/79-05/18/81	175	0.06	0.561	5.83	0.	0.997	0.999	0.02	0.04	0.7	1.854
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	05/23/79-05/18/81	174	0.04	0.11	1.13	0.	0.025	0.159	0.01	0.03	0.123	0.345
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	05/23/79-05/18/81	189	0.01	0.051	0.62	0.	0.011	0.103	0.	0.01	0.04	0.14
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	01/07/80-07/07/80	19	5.	5.6	16.2	2.8	9.517	3.085	3.	3.7	6.7	8.3
00681	CARBON, DISSOLVED ORGANIC (MG/L AS C)	01/07/80-11/10/80	23	3.5	3.874	8.3	0.5	4.567	2.137	1.26	2.4	4.9	7.84
01049	LEAD, DISSOLVED (UG/L AS PB)	06/18/79-12/01/80	66	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
01051	LEAD, TOTAL (UG/L AS PB)	06/18/79-12/01/80	66	0.	4.545	150.	0.	671.329	25.91	0.	0.	0.	0.
01090	ZINC, DISSOLVED (UG/L AS ZN)	06/18/79-11/25/80	58	0.	26.931	520.	0.	5627.153	75.014	0.	0.	25.	60.
01092	ZINC, TOTAL (UG/L AS ZN)	06/18/79-12/01/80	65	15.	44.723	690.	0.	11471.703	107.106	0.	0.	40.	112.

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

## EPA Water Quality Criteria Analysis for Station: MANA0048

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
00403	PH, LAB					Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
	Other-Hi Lim.	9.	35	0	0.00	14	0	0.00	15	0	0.00	6	0	0.00			
	Other-Lo Lim.	6.5	35	35	1.00	14	14	1.00	15	15	1.00	6	6	1.00			
00630	NITRITE PLUS NITRATE, TOTAL 1 DET.	10.	188	0	0.00	60	0	0.00	72	0	0.00	56	0	0.00			
01049	LEAD, DISSOLVED																
	Fresh Acute	82.	66	0	0.00	32	0	0.00	17	0	0.00	17	0	0.00			
	Drinking Water	15.	66	0	0.00	32	0	0.00	17	0	0.00	17	0	0.00			
01051	LEAD, TOTAL																
	Fresh Acute	82.	66	2	0.03	32	1	0.03	17	0	0.00	17	1	0.06			
	Drinking Water	15.	66	2	0.03	32	1	0.03	17	0	0.00	17	1	0.06			
01090	ZINC, DISSOLVED																
	Fresh Acute	120.	58	3	0.05	29	2	0.07	13	1	0.08	16	0	0.00			
	Drinking Water	5000.	58	0	0.00	29	0	0.00	13	0	0.00	16	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter



EPA Water Quality Criteria Analysis for Station: MANA0048

Parameter	Std. Type	Std. Value	Total	Exceed	Prop.	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
			Obs	Standard	Exceeding	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
01092	ZINC, TOTAL																
	Fresh Acute	120.	65	5	0.08	32	3	0.09	16	1	0.06	17	1	0.06			
	Drinking Water	5000.	65	0	0.00	32	0	0.00	16	0	0.00	17	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0049

NPS Station ID: MANA0049  
 Location: BLACK BRANCH NEAR HAYMARKET, VA  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin:  
 Minor Basin:  
 RF1 Index: 02070010  
 RF3 Index: 02070010050400.00  
 Description:

LAT/LON: 38.912781/ -77.628616

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 0.99

Agency: 112WRD  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): 01656705  
 Within Park Boundary: No

Date Created: 02/23/80

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 12.90  
 Distance from RF3: 0.02

On/Off RF1:  
 On/Off RF3:

## Parameter Inventory for Station: MANA0049

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00010 TEMPERATURE, WATER (DEGREES CENTIGRADE)	08/28/79-08/28/79	1	21.	21.	21.	21.	0.	0.	**	**	**	**
00080 COLOR (PLATINUM-COBALT UNITS)	08/28/79-08/28/79	1	60.	60.	60.	60.	0.	0.	**	**	**	**
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/28/79-08/28/79	1	90.	90.	90.	90.	0.	0.	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	08/28/79-08/28/79	1	8.4	8.4	8.4	8.4	0.	0.	**	**	**	**
00400 PH (STANDARD UNITS)	08/28/79-08/28/79	1	5.2	5.2	5.2	5.2	0.	0.	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	08/28/79-08/28/79	1	5.2	5.2	5.2	5.2	0.	0.	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	08/28/79-08/28/79	1	6.31	6.31	6.31	6.31	0.	0.	**	**	**	**
00405 CARBON DIOXIDE (MG/L AS CO2)	08/28/79-08/28/79	1	303.	303.	303.	303.	0.	0.	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	08/28/79-08/28/79	1	25.	25.	25.	25.	0.	0.	**	**	**	**
00440 BICARBONATE ION (MG/L AS HCO3)	08/28/79-08/28/79	1	30.	30.	30.	30.	0.	0.	**	**	**	**
00445 CARBONATE ION (MG/L AS CO3)	08/28/79-08/28/79	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00613 NITRITE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	1	0.01	0.01	0.01	0.01	0.	0.	**	**	**	**
00618 NITRATE NITROGEN, DISSOLVED (MG/L AS N)	08/28/79-08/28/79	1	0.13	0.13	0.13	0.13	0.	0.	**	**	**	**
00631 NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	08/28/79-08/28/79	1	0.1	0.1	0.1	0.1	0.	0.	**	**	**	**
00660 PHOSPHATE, ORTHO (MG/L AS PO4)	08/28/79-08/28/79	1	0.	0.	0.	0.	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	08/28/79-08/28/79	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	08/28/79-08/28/79	1	31.	31.	31.	31.	0.	0.	**	**	**	**
00902 HARDNESS, NON-CARBONATE (MG/L AS CaCO3)	08/28/79-08/28/79	1	7.	7.	7.	7.	0.	0.	**	**	**	**
00915 CALCIUM, DISSOLVED (MG/L AS Ca)	08/28/79-08/28/79	1	7.3	7.3	7.3	7.3	0.	0.	**	**	**	**
00925 MAGNESIUM, DISSOLVED (MG/L AS MG)	08/28/79-08/28/79	1	3.2	3.2	3.2	3.2	0.	0.	**	**	**	**
00930 SODIUM, DISSOLVED (MG/L AS NA)	08/28/79-08/28/79	1	3.1	3.1	3.1	3.1	0.	0.	**	**	**	**
00931 SODIUM ADSORPTION RATIO	08/28/79-08/28/79	1	0.2	0.2	0.2	0.2	0.	0.	**	**	**	**
00932 SODIUM, PERCENT	08/28/79-08/28/79	1	17.	17.	17.	17.	0.	0.	**	**	**	**
00933 SODIUM,PLUS POTASSIUM (MG/L)	08/28/79-08/28/79	1	5.	5.	5.	5.	0.	0.	**	**	**	**
00935 POTASSIUM, DISSOLVED (MG/L AS K)	08/28/79-08/28/79	1	1.9	1.9	1.9	1.9	0.	0.	**	**	**	**
00940 CHLORIDE,TOTAL IN WATER MG/L	08/28/79-08/28/79	1	3.	3.	3.	3.	0.	0.	**	**	**	**
00945 SULFATE, TOTAL (MG/L AS SO4)	08/28/79-08/28/79	1	9.	9.	9.	9.	0.	0.	**	**	**	**
00950 FLUORIDE, DISSOLVED (MG/L AS F)	08/28/79-08/28/79	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
00955 SILICA, DISSOLVED (MG/L AS SiO2)	08/28/79-08/28/79	1	15.	15.	15.	15.	0.	0.	**	**	**	**
01000 ARSENIC, DISSOLVED (UG/L AS AS)	08/28/79-08/28/79	1	1.	1.	1.	1.	0.	0.	**	**	**	**
01025 CADMIUM, DISSOLVED (UG/L AS CD)	08/28/79-08/28/79	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
01030 CHROMIUM, DISSOLVED (UG/L AS CR)	08/28/79-08/28/79	1 ##	10.	10.	10.	10.	0.	0.	**	**	**	**
01040 COPPER, DISSOLVED (UG/L AS CU)	08/28/79-08/28/79	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
01046 IRON, DISSOLVED (UG/L AS FE)	08/28/79-08/28/79	1	410.	410.	410.	410.	0.	0.	**	**	**	**
01049 LEAD, DISSOLVED (UG/L AS PB)	08/28/79-08/28/79	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
01056 MANGANESE, DISSOLVED (UG/L AS MN)	08/28/79-08/28/79	1	50.	50.	50.	50.	0.	0.	**	**	**	**
01090 ZINC, DISSOLVED (UG/L AS ZN)	08/28/79-08/28/79	1 ##	10.	10.	10.	10.	0.	0.	**	**	**	**
01145 SELENIUM, DISSOLVED (UG/L AS SE)	08/28/79-08/28/79	1 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0049

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
70300 RESIDUE,TOTAL FILTRABLE (DRIED AT 180C),MG/L	08/28/79-08/28/79	1	80.	80.	80.	80.	0.	0.	**	**	**	**
70301 SOLIDS, DISSOLVED-SUM OF CONSTITUENTS (MG/L)	08/28/79-08/28/79	1	59.	59.	59.	59.	0.	0.	**	**	**	**
70303 SOLIDS, DISSOLVED-TONS PER ACRE-FT	08/28/79-08/28/79	1	0.11	0.11	0.11	0.11	0.	0.	**	**	**	**
71851 NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	08/28/79-08/28/79	1	0.6	0.6	0.6	0.6	0.	0.	**	**	**	**
71856 NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	08/28/79-08/28/79	1	0.03	0.03	0.03	0.03	0.	0.	**	**	**	**
71890 MERCURY, DISSOLVED (UG/L AS HG)	08/28/79-08/28/79	1 ##	0.25	0.25	0.25	0.25	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0049

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00300 OXYGEN, DISSOLVED	Other-Lo Lim.	4.	1	0	0.00							1	0	0.00			
00400 PH	Other-Hi Lim.	9.	1	0	0.00							1	0	0.00			
	Other-Lo Lim.	6.5	1	1	1.00							1	1	1.00			
00613 NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	1	0	0.00							1	0	0.00			
00618 NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	1	0	0.00							1	0	0.00			
00631 NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	1	0	0.00							1	0	0.00			
00940 CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	1	0	0.00							1	0	0.00			
	Drinking Water	250.	1	0	0.00							1	0	0.00			
00945 SULFATE, TOTAL (AS SO4)	Drinking Water	250.	1	0	0.00							1	0	0.00			
00950 FLUORIDE, DISSOLVED AS F	Drinking Water	4.	1	0	0.00							1	0	0.00			
01000 ARSENIC, DISSOLVED	Fresh Acute	360.	1	0	0.00							1	0	0.00			
	Drinking Water	50.	1	0	0.00							1	0	0.00			
01025 CADMIUM, DISSOLVED	Fresh Acute	3.9	1	0	0.00							1	0	0.00			
	Drinking Water	5.	1	0	0.00							1	0	0.00			
01030 CHROMIUM, DISSOLVED	Drinking Water	100.	1	0	0.00							1	0	0.00			
01040 COPPER, DISSOLVED	Fresh Acute	18.	1	0	0.00							1	0	0.00			
	Drinking Water	1300.	1	0	0.00							1	0	0.00			
01049 LEAD, DISSOLVED	Fresh Acute	82.	1	0	0.00							1	0	0.00			
	Drinking Water	15.	1	0	0.00							1	0	0.00			
01090 ZINC, DISSOLVED	Fresh Acute	120.	1	0	0.00							1	0	0.00			
	Drinking Water	5000.	1	0	0.00							1	0	0.00			
01145 SELENIUM, DISSOLVED	Fresh Acute	20.	1	0	0.00							1	0	0.00			
	Drinking Water	50.	1	0	0.00							1	0	0.00			
71851 NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	1	0	0.00							1	0	0.00			
71856 NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	1	0	0.00							1	0	0.00			
71890 MERCURY, DISSOLVED	Fresh Acute	2.4	1	0	0.00							1	0	0.00			
	Drinking Water	2.	1	0	0.00							1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## Station Inventory for Station: MANA0050

NPS Station ID: MANA0050  
 Location: ROUTE 6T00 (PRINCE WILLIAM CO)  
 Station Type: /TYPA/AMBNT/STREAM  
 RMI-Indexes:  
 RMI-Miles:  
 HUC: 02070010  
 Major Basin: 02-NORTH ATLANTIC  
 Minor Basin: 1-POTOMAC-SHENANDOAH  
 RF1 Index: 02070010  
 RF3 Index: 02070010059601.50  
 Description:  
 VIRGINIA STATE WATER CONTROL BOARD  
 RIVER: CATHARPIN CREEK

LAT/LON: 38.870004/ -77.684449

Depth of Water: 0  
 Elevation: 0

RF1 Mile Point: 0.000  
 RF3 Mile Point: 4.50

Agency: 21VASWCB  
 FIPS State/County: 51153 VIRGINIA/PRINCE WILLIAM  
 STORET Station ID(s): 1ACAA008.01  
 Within Park Boundary: No

Date Created: 03/13/93

Aquifer:  
 Water Body Id:  
 ECO Region:  
 Distance from RF1: 0.00  
 Distance from RF3: 0.21

On/Off RF1:  
 On/Off RF3:

SECTION: 07A      TOPO MAP #: 0026      TOPO MAP NAME: THOROUGHFARE GAP, VA      REGION: 3 NORTHERN

### Parameter Inventory for Station: MANA0050

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th
00076 TURBIDITY,HACH TURBIDIMETER (FORMAZIN TURB UNIT)	08/02/94-08/02/94	1	4.	4.	4.	4.	0.	0.	**	**	**	**
00095 SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	08/02/94-08/02/94	1	31.	31.	31.	31.	0.	0.	**	**	**	**
00300 OXYGEN, DISSOLVED MG/L	04/29/75-04/29/75	1	14.1	14.1	14.1	14.1	0.	0.	**	**	**	**
00310 BOD, 5 DAY, 20 DEG C MG/L	04/29/75-08/02/94	2 ##	0.75	0.75	1.	0.5	0.125	0.354	**	**	**	**
00340 COD, .25N K2CR2O7 MG/L	04/29/75-08/02/94	2	6.5	6.5	9.	4.	12.5	3.536	**	**	**	**
00400 PH (STANDARD UNITS)	04/29/75-04/29/75	1	7.5	7.5	7.5	7.5	0.	0.	**	**	**	**
00400 CONVERTED PH (STANDARD UNITS)	04/29/75-04/29/75	1	7.5	7.5	7.5	7.5	0.	0.	**	**	**	**
00400 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/29/75-04/29/75	1	0.032	0.032	0.032	0.032	0.	0.	**	**	**	**
00403 PH, LAB, STANDARD UNITS SU	04/29/75-08/02/94	2	6.3	6.3	6.4	6.2	0.02	0.141	**	**	**	**
00403 CONVERTED PH, LAB, STANDARD UNITS	04/29/75-08/02/94	2	6.289	6.289	6.4	6.2	0.02	0.142	**	**	**	**
00403 MICRO EQUIVALENTS/LITER OF H+ COMPUTED FROM PH	04/29/75-08/02/94	2	0.515	0.515	0.631	0.398	0.027	0.165	**	**	**	**
00410 ALKALINITY, TOTAL (MG/L AS CaCO3)	04/29/75-08/02/94	2	9.5	9.5	11.	8.	4.5	2.121	**	**	**	**
00500 RESIDUE, TOTAL (MG/L)	04/29/75-04/29/75	1	57.	57.	57.	57.	0.	0.	**	**	**	**
00505 RESIDUE, TOTAL VOLATILE (MG/L)	04/29/75-04/29/75	1	36.	36.	36.	36.	0.	0.	**	**	**	**
00510 RESIDUE, TOTAL FIXED (MG/L)	04/29/75-04/29/75	1	21.	21.	21.	21.	0.	0.	**	**	**	**
00515 RESIDUE, TOTAL FILTRABLE (DRIED AT 105C),MG/L	08/02/94-08/02/94	1	25.	25.	25.	25.	0.	0.	**	**	**	**
00530 RESIDUE, TOTAL NONFILTRABLE (MG/L)	04/29/75-08/02/94	2	2.	2.	4.	0.	8.	2.828	**	**	**	**
00535 RESIDUE, VOLATILE NONFILTRABLE (MG/L)	04/29/75-08/02/94	2	1.	1.	2.	0.	2.	1.414	**	**	**	**
00540 RESIDUE, FIXED NONFILTRABLE (MG/L)	04/29/75-08/02/94	2	1.	1.	2.	0.	2.	1.414	**	**	**	**
00610 NITROGEN, AMMONIA, TOTAL (MG/L AS N)	04/29/75-08/02/94	2 ##	0.035	0.035	0.05	0.02	0.	0.021	**	**	**	**
00615 NITRITE NITROGEN, TOTAL (MG/L AS N)	04/29/75-08/02/94	2 ##	0.008	0.008	0.01	0.005	0.	0.004	**	**	**	**
00620 NITRATE NITROGEN, TOTAL (MG/L AS N)	04/29/75-08/02/94	2	0.065	0.065	0.07	0.06	0.	0.007	**	**	**	**
00625 NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	04/29/75-08/02/94	2 ##	0.125	0.125	0.2	0.05	0.011	0.106	**	**	**	**
00665 PHOSPHORUS, TOTAL (MG/L AS P)	04/29/75-08/02/94	2 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
00671 PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	04/29/75-04/29/75	1 ##	0.05	0.05	0.05	0.05	0.	0.	**	**	**	**
00680 CARBON, TOTAL ORGANIC (MG/L AS C)	04/29/75-08/02/94	2	5.	5.	7.	3.	8.	2.828	**	**	**	**
00900 HARDNESS, TOTAL (MG/L AS CaCO3)	08/02/94-08/02/94	1	8.	8.	8.	8.	0.	0.	**	**	**	**
00940 CHLORIDE, TOTAL IN WATER MG/L	08/02/94-08/02/94	1	2.	2.	2.	2.	0.	0.	**	**	**	**
00945 SULFATE, TOTAL (MG/L AS SO4)	08/02/94-08/02/94	1	2.	2.	2.	2.	0.	0.	**	**	**	**
01002 ARSENIC, TOTAL (UG/L AS AS)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
01003 ARSENIC IN BOTTOM DEPOSITS (MG/KG AS AS DRY WGT)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
01012 BERYLLIUM, TOTAL (UG/L AS BE)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
01013 BERYLLIUM IN BOTTOM DEPOSITS(MG/KG AS BE DRY WGT)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### Parameter Inventory for Station: MANA0050

Parameter	Period of Record	Obs	Median	Mean	Maximum	Minimum	Variance	Std. Dev.	10th	25th	75th	90th	
01027	CADMIUM, TOTAL (UG/L AS CD)	08/02/94-08/02/94	1 ##	1.5	1.5	1.5	1.5	0.	0.	**	**	**	**
01028	CADMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
01029	CHROMIUM,TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	08/02/94-08/02/94	1 ##	6.5	6.5	6.5	6.5	0.	0.	**	**	**	**
01034	CHROMIUM, TOTAL (UG/L AS CR)	08/02/94-08/02/94	1	14.	14.	14.	14.	0.	0.	**	**	**	**
01042	COPPER, TOTAL (UG/L AS CU)	08/02/94-08/02/94	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01043	COPPER IN BOTTOM DEPOSITS (MG/KG AS CU DRY WGT)	08/02/94-08/02/94	1 ##	7.	7.	7.	7.	0.	0.	**	**	**	**
01045	IRON, TOTAL (UG/L AS FE)	08/02/94-08/02/94	1	630.	630.	630.	630.	0.	0.	**	**	**	**
01051	LEAD, TOTAL (UG/L AS PB)	08/02/94-08/02/94	1	5.	5.	5.	5.	0.	0.	**	**	**	**
01052	LEAD IN BOTTOM DEPOSITS (MG/KG AS PB DRY WGT)	08/02/94-08/02/94	1 ##	7.5	7.5	7.5	7.5	0.	0.	**	**	**	**
01053	MANGANESE IN BOTTOM DEPOSITS (MG/KG AS MN DRY WGT)	08/02/94-08/02/94	1 ##	339.	339.	339.	339.	0.	0.	**	**	**	**
01055	MANGANESE, TOTAL (UG/L AS MN)	08/02/94-08/02/94	1	27.	27.	27.	27.	0.	0.	**	**	**	**
01059	THALLIUM, TOTAL (UG/L AS TL)	08/02/94-08/02/94	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01067	NICKEL, TOTAL (UG/L AS NI)	08/02/94-08/02/94	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01068	NICKEL, TOTAL IN BOTTOM DEPOSITS (MG/KG,DRY WGT)	08/02/94-08/02/94	1 ##	6.	6.	6.	6.	0.	0.	**	**	**	**
01077	SILVER, TOTAL (UG/L AS AG)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
01078	SILVER IN BOTTOM DEPOSITS (MG/KG AS AG DRY WGT)	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
01092	ZINC, TOTAL (UG/L AS ZN)	08/02/94-08/02/94	1	20.	20.	20.	20.	0.	0.	**	**	**	**
01093	ZINC IN BOTTOM DEPOSITS (MG/KG AS ZN DRY WGT)	08/02/94-08/02/94	1 ##	26.5	26.5	26.5	26.5	0.	0.	**	**	**	**
01097	ANTIMONY, TOTAL (UG/L AS SB)	08/02/94-08/02/94	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01147	SELENIUM, TOTAL (UG/L AS SE)	08/02/94-08/02/94	1 ##	5.	5.	5.	5.	0.	0.	**	**	**	**
01148	SELENIUM IN BOTTOM DEPOSITS (MG/KG AS SE DRY WGT)	08/02/94-08/02/94	1 ##	0.5	0.5	0.5	0.5	0.	0.	**	**	**	**
01170	IRON IN BOTTOM DEPOSITS (MG/KG AS FE DRY WGT)	08/02/94-08/02/94	1 ##	9581.5	9581.5	9581.5	9581.5	0.	0.	**	**	**	**
31615	FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	08/02/94-08/02/94	1 ##	1.	1.	1.	1.	0.	0.	**	**	**	**
31615	LOG FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	08/02/94-08/02/94	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
31615	GM FECAL COLIFORM,MPN,EC MED,44.5C (TUBE 31614)	08/02/94-08/02/94	1 ##	0.	0.	0.	0.	0.	0.	**	**	**	**
31616	FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/29/75-08/02/94	2 ##	75.	75.	100.	50.	1250.	35.355	**	**	**	**
31616	LOG FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/29/75-08/02/94	2 ##	1.849	1.849	2.	1.699	0.045	0.213	**	**	**	**
31616	GM FECAL COLIFORM,MEMBR FILTER,M-FC BROTH,44.5 C	04/29/75-08/02/94	2 ##	70.711	70.711	100.	50.	1250.	35.355	**	**	**	**
34480	THALLIUM DRY WGTBOTMG/KG	08/02/94-08/02/94	1 ##	2.5	2.5	2.5	2.5	0.	0.	**	**	**	**
46570	HARDNESS, CA MG CALCULATED (MG/L AS CaCO3)	08/02/94-08/02/94	1	11.	11.	11.	11.	0.	0.	**	**	**	**
70507	PHOSPHORUS,IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	08/02/94-08/02/94	1 ##	0.005	0.005	0.005	0.005	0.	0.	**	**	**	**
71900	MERCURY, TOTAL (UG/L AS HG)	08/02/94-08/02/94	1 ##	0.15	0.15	0.15	0.15	0.	0.	**	**	**	**
71921	MERCURY,TOT. IN BOT. DEPOS. (MG/KG AS HG DRY WGT)	08/02/94-08/02/94	1 ##	0.15	0.15	0.15	0.15	0.	0.	**	**	**	**
82033	MAGNESIUM - TOTAL UG/L(AS MG)	08/02/94-08/02/94	1	1200.	1200.	1200.	1200.	0.	0.	**	**	**	**

\*\* - Less than 9 observations    ## - Computed with 50% or more of the total observations as values that were half the detection limit    p - Has a corresponding time series plot

### EPA Water Quality Criteria Analysis for Station: MANA0050

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00076	TURBIDITY, HACH TURBIDIMETER	Other-Hi Lim.	50.	1	0	0.00						1	0	0.00			
00300	OXYGEN, DISSOLVED	Other-Lo Lim.	4.	1	0	0.00			1	0	0.00						
00400	PH	Other-Hi Lim.	9.	1	0	0.00			1	0	0.00						
		Other-Lo Lim.	6.5	1	0	0.00			1	0	0.00						
00403	PH, LAB	Other-Hi Lim.	9.	2	0	0.00			1	0	0.00	1	0	0.00			
		Other-Lo Lim.	6.5	2	2	1.00			1	1	1.00	1	1	1.00			
00615	NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	2	0	0.00			1	0	0.00	1	0	0.00			
00620	NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	2	0	0.00			1	0	0.00	1	0	0.00			
00940	CHLORIDE,TOTAL IN WATER	Fresh Acute	860.	1	0	0.00			1	0	0.00	1	0	0.00			
		Drinking Water	250.	1	0	0.00			1	0	0.00	1	0	0.00			
00945	SULFATE, TOTAL (AS SO4)	Drinking Water	250.	1	0	0.00			1	0	0.00	1	0	0.00			
01002	ARSENIC, TOTAL	Fresh Acute	360.	1	0	0.00			1	0	0.00	1	0	0.00			
		Drinking Water	50.	1	0	0.00			1	0	0.00	1	0	0.00			
01012	BERYLLIUM, TOTAL	Fresh Acute	130.	1	0	0.00			1	0	0.00	1	0	0.00			
		Drinking Water	4.	1	0	0.00			1	0	0.00	1	0	0.00			
01027	CADMIUM, TOTAL	Fresh Acute	3.9	1	0	0.00			1	0	0.00	1	0	0.00			
		Drinking Water	5.	1	0	0.00			1	0	0.00	1	0	0.00			
01034	CHROMIUM, TOTAL	Drinking Water	100.	1	0	0.00			1	0	0.00	1	0	0.00			
01042	COPPER, TOTAL	Fresh Acute	18.	1	0	0.00			1	0	0.00	1	0	0.00			
		Drinking Water	1300.	1	0	0.00			1	0	0.00	1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

### EPA Water Quality Criteria Analysis for Station: MANA0050

Parameter	Std. Type	Std. Value	Total		Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
			Obs	Standard		Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
01051 LEAD, TOTAL	Fresh Acute	82.	1	0	0.00							1	0	0.00			
	Drinking Water	15.	1	0	0.00							1	0	0.00			
01059 THALLIUM, TOTAL	Fresh Acute	1400.	1	0	0.00							1	0	0.00			
	Drinking Water	2.	0 &	0	0.00												
01067 NICKEL, TOTAL	Fresh Acute	1400.	1	0	0.00							1	0	0.00			
	Drinking Water	100.	1	0	0.00							1	0	0.00			
01077 SILVER, TOTAL	Fresh Acute	4.1	1	0	0.00							1	0	0.00			
	Drinking Water	100.	1	0	0.00							1	0	0.00			
01092 ZINC, TOTAL	Fresh Acute	120.	1	0	0.00							1	0	0.00			
	Drinking Water	5000.	1	0	0.00							1	0	0.00			
01097 ANTIMONY, TOTAL	Fresh Acute	88.	1	0	0.00							1	0	0.00			
	Drinking Water	6.	1	0	0.00							1	0	0.00			
01147 SELENIUM, TOTAL	Fresh Acute	20.	1	0	0.00							1	0	0.00			
	Drinking Water	50.	1	0	0.00							1	0	0.00			
31615 FECAL COLIFORM, MPN	Other-Hi Lim.	200.	1	0	0.00							1	0	0.00			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	2	0	0.00				1	0	0.00	1	0	0.00			
71900 MERCURY, TOTAL	Fresh Acute	2.4	1	0	0.00							1	0	0.00			
	Drinking Water	2.	1	0	0.00							1	0	0.00			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## EPA Water Quality Criteria Analysis for Entire MANA Study Area

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
00070	TURBIDITY, JACKSON CANDLE UNITS	Other-Hi Lim.	50.	60	5	0.08	29	3	0.10	18	0	0.00	13	2	0.15		
00076	TURBIDITY, HACH TURBIDIMETER	Other-Hi Lim.	50.	41	1	0.02	19	0	0.00	11	0	0.00	11	1	0.09		
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE	Other-Lo Lim.	4.	1172	53	0.05	386	11	0.03	512	17	0.03	274	25	0.09		
00300	OXYGEN, DISSOLVED	Other-Lo Lim.	4.	1008	14	0.01	394	3	0.01	387	4	0.01	227	7	0.03		
00400	PH	Other-Hi Lim.	9.	979	4	0.00	361	1	0.00	375	3	0.01	243	0	0.00		
		Other-Lo Lim.	6.5	979	72	0.07	361	32	0.09	375	28	0.07	243	12	0.05		
00403	PH, LAB	Other-Hi Lim.	9.	213	0	0.00	92	0	0.00	74	0	0.00	47	0	0.00		
		Other-Lo Lim.	6.5	213	40	0.19	92	16	0.17	74	17	0.23	47	7	0.15		
00406	PH, FIELD	Other-Hi Lim.	9.	1099	1	0.00	352	0	0.00	489	0	0.00	258	1	0.00		
		Other-Lo Lim.	6.5	1099	71	0.06	352	36	0.10	489	18	0.04	258	17	0.07		
00613	NITRITE NITROGEN, DISSOLVED AS N	Drinking Water	1.	303	3	0.01	144	0	0.00	74	0	0.00	85	3	0.04		
00615	NITRITE NITROGEN, TOTAL AS N	Drinking Water	1.	587	12	0.02	219	2	0.01	238	7	0.03	130	3	0.02		
00618	NITRATE NITROGEN, DISSOLVED AS N	Drinking Water	10.	300	0	0.00	144	0	0.00	74	0	0.00	82	0	0.00		
00620	NITRATE NITROGEN, TOTAL AS N	Drinking Water	10.	459	28	0.06	171	9	0.05	178	6	0.03	110	13	0.12		
00630	NITRITE PLUS NITRATE, TOTAL 1 DET.	Drinking Water	10.	601	7	0.01	186	7	0.04	246	0	0.00	169	0	0.00		
00631	NITRITE PLUS NITRATE, DISS. 1 DET.	Drinking Water	10.	1053	0	0.00	338	0	0.00	459	0	0.00	256	0	0.00		
00940	CHLORIDE, TOTAL IN WATER	Fresh Acute	860.	175	0	0.00	76	0	0.00	56	0	0.00	43	0	0.00		
		Drinking Water	250.	175	0	0.00	76	0	0.00	56	0	0.00	43	0	0.00		
00945	SULFATE, TOTAL (AS SO4)	Drinking Water	250.	163	1	0.01	71	0	0.00	49	1	0.02	43	0	0.00		
00950	FLUORIDE, DISSOLVED AS F	Drinking Water	4.	24	0	0.00	4	0	0.00	7	0	0.00	13	0	0.00		
00951	FLUORIDE, TOTAL AS F	Drinking Water	4.	72	0	0.00	37	0	0.00	20	0	0.00	15	0	0.00		
01000	ARSENIC, DISSOLVED	Fresh Acute	360.	3	0	0.00				1	0	0.00	2	0	0.00		
		Drinking Water	50.	3	0	0.00				1	0	0.00	2	0	0.00		
01002	ARSENIC, TOTAL	Fresh Acute	360.	57	0	0.00	12	0	0.00	27	0	0.00	18	0	0.00		
		Drinking Water	50.	57	0	0.00	12	0	0.00	27	0	0.00	18	0	0.00		
01012	BERYLLIUM, TOTAL	Fresh Acute	130.	10	0	0.00				4	0	0.00	6	0	0.00		
		Drinking Water	4.	4 &	0	0.00							4	0	0.00		
01025	CADMIUM, DISSOLVED	Fresh Acute	3.9	3	0	0.00				1	0	0.00	2	0	0.00		
		Drinking Water	5.	3	0	0.00				1	0	0.00	2	0	0.00		
01027	CADMIUM, TOTAL	Fresh Acute	3.9	18 &	4	0.22				7	1	0.14	11	3	0.27		
		Drinking Water	5.	18 &	4	0.22				7	1	0.14	11	3	0.27		
01030	CHROMIUM, DISSOLVED	Drinking Water	100.	3	0	0.00				1	0	0.00	2	0	0.00		
01034	CHROMIUM, TOTAL	Drinking Water	100.	64	0	0.00	13	0	0.00	32	0	0.00	19	0	0.00		
01040	COPPER, DISSOLVED	Fresh Acute	18.	3	0	0.00				1	0	0.00	2	0	0.00		
		Drinking Water	1300.	3	0	0.00				1	0	0.00	2	0	0.00		
01042	COPPER, TOTAL	Fresh Acute	18.	59 &	3	0.05	13	0	0.00	32	0	0.00	14	3	0.21		
		Drinking Water	1300.	63	0	0.00	13	0	0.00	32	0	0.00	18	0	0.00		
01049	LEAD, DISSOLVED	Fresh Acute	82.	145	0	0.00	74	0	0.00	24	0	0.00	47	0	0.00		
		Drinking Water	15.	145	0	0.00	74	0	0.00	24	0	0.00	47	0	0.00		
01051	LEAD, TOTAL	Fresh Acute	82.	209	2	0.01	87	1	0.01	55	0	0.00	67	1	0.01		
		Drinking Water	15.	209	11	0.05	87	2	0.02	55	3	0.05	67	6	0.09		
01059	THALLIUM, TOTAL	Fresh Acute	1400.	10	0	0.00				4	0	0.00	6	0	0.00		
		Drinking Water	2.	0 &	0	0.00											
01065	NICKEL, DISSOLVED	Fresh Acute	1400.	39	0	0.00	12	0	0.00	22	0	0.00	5	0	0.00		
		Drinking Water	100.	39	0	0.00	12	0	0.00	22	0	0.00	5	0	0.00		
01067	NICKEL, TOTAL	Fresh Acute	1400.	21	0	0.00	1	0	0.00	9	0	0.00	11	0	0.00		
		Drinking Water	100.	21	1	0.05	1	0	0.00	9	1	0.11	11	0	0.00		
01075	SILVER, DISSOLVED	Fresh Acute	4.1	1	0	0.00				1	0	0.00					
		Drinking Water	100.	1	0	0.00				1	0	0.00					
01077	SILVER, TOTAL	Fresh Acute	4.1	4	0	0.00							4	0	0.00		
		Drinking Water	100.	4	0	0.00							4	0	0.00		
01090	ZINC, DISSOLVED	Fresh Acute	120.	133	4	0.03	71	2	0.03	20	2	0.10	42	0	0.00		
		Drinking Water	5000.	133	0	0.00	71	0	0.00	20	0	0.00	42	0	0.00		
01092	ZINC, TOTAL	Fresh Acute	120.	202	10	0.05	87	5	0.06	54	1	0.02	61	4	0.07		
		Drinking Water	5000.	202	0	0.00	87	0	0.00	54	0	0.00	61	0	0.00		
01097	ANTIMONY, TOTAL	Fresh Acute	88.	2	0	0.00							2	0	0.00		
		Drinking Water	6.	2	0	0.00							2	0	0.00		
01145	SELENIUM, DISSOLVED	Fresh Acute	20.	2	0	0.00							2	0	0.00		
		Drinking Water	50.	2	0	0.00							2	0	0.00		
01147	SELENIUM, TOTAL	Fresh Acute	20.	14	0	0.00				4	0	0.00	10	0	0.00		
		Drinking Water	50.	14	0	0.00				4	0	0.00	10	0	0.00		

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter

## EPA Water Quality Criteria Analysis for Entire MANA Study Area

Parameter	Std. Type	Std. Value	Total Obs	Exceed Standard	Prop. Exceeding	-----10/01-3/14-----			-----3/15-7/14-----			-----7/15-9/30-----			-----n/a-----		
						Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.	Obs	Exceed	Prop.
04035 SIMAZINE, DISSOLVED, WATER, TOTAL RECOVER	Drinking Water	4.	1	0	0.00							1	0	0.00			
31501 COLIFORM, TOTAL, MEMBRANE FILTER, IMMEDIATE	Other-Hi Lim.	1000.	10	9	0.90	9	8	0.89	1	1	1.00						
31505 COLIFORM, TOTAL, MPN, CONF. TEST, 35C	Other-Hi Lim.	1000.	40	19	0.48	11	0	0.00	22	13	0.59	7	6	0.86			
31506 COLIFORM, TOTAL, MPN, CONF. TEST, TUBE C	Other-Hi Lim.	1000.	2	2	1.00				2	2	1.00						
31615 FECAL COLIFORM, MPN	Other-Hi Lim.	200.	126	53	0.42	38	13	0.34	55	26	0.47	33	14	0.42			
31616 FECAL COLIFORM, MEMBRANE FILTER, BROTH	Other-Hi Lim.	200.	816	202	0.25	318	69	0.22	313	88	0.28	185	45	0.24			
34356 ENDOSULFAN, BETA, TOTAL	Fresh Acute	0.22	6	0	0.00				1	0	0.00	5	0	0.00			
34361 ENDOSULFAN, ALPHA, TOTAL	Fresh Acute	0.22	6	0	0.00				1	0	0.00	5	0	0.00			
34653 P,P'-DDE, DISSOLVED	Fresh Acute	1050.	1	0	0.00							1	0	0.00			
38933 CHLORPYRIFOS, DISSOLVED	Fresh Acute	0.083	1	0	0.00							1	0	0.00			
39032 PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE	Fresh Acute	20.	9	0	0.00	1	0	0.00	1	0	0.00	7	0	0.00			
	Drinking Water	1.	9	0	0.00	1	0	0.00	1	0	0.00	7	0	0.00			
39300 P,P' DDT IN WHOLE WATER SAMPLE	Fresh Acute	1.1	9	0	0.00	1	0	0.00	1	0	0.00	7	0	0.00			
39310 P,P' DDD IN WHOLE WATER SAMPLE	Fresh Acute	0.6	9	0	0.00	1	0	0.00	1	0	0.00	7	0	0.00			
39320 P,P' DDE IN WHOLE WATER SAMPLE	Fresh Acute	1050.	9	0	0.00	1	0	0.00	1	0	0.00	7	0	0.00			
39330 ALDRIN IN WHOLE WATER SAMPLE	Fresh Acute	3.	13	0	0.00	1	0	0.00	4	0	0.00	8	0	0.00			
39340 GAMMA-BHC(LINDANE), WHOLE WATER	Fresh Acute	2.	6	0	0.00				1	0	0.00	5	0	0.00			
	Drinking Water	0.2	6	0	0.00				1	0	0.00	5	0	0.00			
39341 GAMMA-BHC(LINDANE), DISSOLVED	Fresh Acute	2.	1	0	0.00							1	0	0.00			
	Drinking Water	0.2	1	0	0.00							1	0	0.00			
39350 CHLORDANE(TECH MIX & METABS), WHOLE WATER	Fresh Acute	2.4	3	0	0.00	1	0	0.00				2	0	0.00			
	Drinking Water	2.	3	0	0.00	1	0	0.00				2	0	0.00			
39380 DIELDRIN IN WHOLE WATER SAMPLE	Fresh Acute	2.5	9	0	0.00	1	0	0.00	1	0	0.00	7	0	0.00			
39381 DIELDRIN IN FILT. FRAC. OF WATER SAMPLE	Fresh Acute	2.5	1	0	0.00							1	0	0.00			
39390 ENDRIN IN WHOLE WATER SAMPLE	Fresh Acute	0.18	9	0	0.00	1	0	0.00	1	0	0.00	7	0	0.00			
	Drinking Water	2.	9	0	0.00	1	0	0.00	1	0	0.00	7	0	0.00			
39400 TOXAPHENE IN WHOLE WATER SAMPLE	Fresh Acute	0.73	6	0	0.00				1	0	0.00	5	0	0.00			
	Drinking Water	3.	6	0	0.00				1	0	0.00	5	0	0.00			
39410 HEPTACHLOR IN WHOLE WATER SAMPLE	Fresh Acute	0.52	6	0	0.00				1	0	0.00	5	0	0.00			
	Drinking Water	0.4	6	0	0.00				1	0	0.00	5	0	0.00			
39420 HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE	Fresh Acute	0.52	6	0	0.00				1	0	0.00	5	0	0.00			
	Drinking Water	0.2	6	0	0.00				1	0	0.00	5	0	0.00			
39480 METHOXYCHLOR IN WHOLE WATER SAMPLE	Drinking Water	40.	3	0	0.00	1	0	0.00				2	0	0.00			
39542 PARATHION IN FILT. FRAC. OF WATER SAMPLE	Fresh Acute	0.065	1	0	0.00							1	0	0.00			
39630 ATRAZINE(AATREX) IN WHOLE WATER SAMPLE	Drinking Water	3.	3	0	0.00				3	0	0.00						
39632 ATRAZINE DISSOLVED IN WATER	Drinking Water	3.	1	0	0.00							1	0	0.00			
39700 HEXACHLOROBENZENE IN WHOLE WATER SAMPLE	Fresh Acute	6.	3	0	0.00	1	0	0.00				2	0	0.00			
	Drinking Water	1.	3	0	0.00	1	0	0.00				2	0	0.00			
39730 2,4-D IN WHOLE WATER SAMPLE	Drinking Water	70.	6	0	0.00				1	0	0.00	5	0	0.00			
39760 SILVEX IN WHOLE WATER SAMPLE	Drinking Water	50.	6	0	0.00				1	0	0.00	5	0	0.00			
46342 ALACHLOR (LASSO), WATER, DISSOLVED	Drinking Water	2.	1	0	0.00							1	0	0.00			
50060 CHLORINE, TOTAL RESIDUAL	Fresh Acute	0.019	99	31	0.31	43	11	0.26	37	14	0.38	19	6	0.32			
71851 NITRATE NITROGEN, DISSOLVED (AS NO3)	Drinking Water	44.	173	0	0.00	76	0	0.00	45	0	0.00	52	0	0.00			
71856 NITRITE NITROGEN, DISSOLVED (AS NO2)	Drinking Water	3.3	163	2	0.01	72	0	0.00	40	0	0.00	51	2	0.04			
71890 MERCURY, DISSOLVED	Fresh Acute	2.4	3	0	0.00				1	0	0.00	2	0	0.00			
	Drinking Water	2.	3	0	0.00				1	0	0.00	2	0	0.00			
71900 MERCURY, TOTAL	Fresh Acute	2.4	61	1	0.02	13	0	0.00	28	1	0.04	20	0	0.00			
	Drinking Water	2.	61	1	0.02	13	0	0.00	28	1	0.04	20	0	0.00			
82078 TURBIDITY, FIELD	Other-Hi Lim.	50.	42	1	0.02	20	1	0.05	13	0	0.00	9	0	0.00			
82079 TURBIDITY, LAB	Other-Hi Lim.	50.	1058	171	0.16	314	8	0.03	487	110	0.23	257	53	0.21			

& - Below detection limit observations, for which half the detection limit exceeded the criterion, were excluded from the criterion comparison for this parameter



**NPS Servicewide Inventory and Monitoring Program Level I**  
**Water Quality Parameter Inventory Data Evaluation and Analysis:**  
**Missing Level I Groups**

No STORET Data Within the MANA Study Area Exist for These Groups:

Chlorophyll\*

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\*Not A Priority Parameter

**NPS Servicewide Inventory and Monitoring Program Level I**

**Water Quality Parameter Inventory Data Evaluation and Analysis:**

**Present Level I Groups**

STORET Data Within the MANA Study Area Exist for These Groups:

Alkalinity		Total Obs.	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Total Stations
00410	ALKALINITY, TOTAL (MG/L AS CaCO <sub>3</sub> )	786	166	249	371	27
00430	ALKALINITY, CARBONATE (MG/L AS CaCO <sub>3</sub> )	253	0	171	82	4
00440	BICARBONATE ION (MG/L AS HCO <sub>3</sub> )	22	0	11	11	12
00445	CARBONATE ION (MG/L AS CO <sub>3</sub> )	19	0	9	10	10
		1080	166	440	474	53 (27) <sup>1</sup>
pH		Total Obs.	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Total Stations
00400	PH (STANDARD UNITS)	979	168	503	308	28
00403	PH, LAB (STANDARD UNITS)	213	167	45	1	13
00406	PH, FIELD (STANDARD UNITS)	1099	798	301	0	11
		2291	1133	849	309	52 (42) <sup>1</sup>
Conductivity		Total Obs.	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Total Stations
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	1299	940	359	0	15
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	171	131	13	27	21
00480	SALINITY - PARTS PER THOUSAND	251	251	0	0	8
		1721	1322	372	27	44 (32) <sup>1</sup>
Dissolved Oxygen		Total Obs.	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Total Stations
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE (MG/L)	1172	890	282	0	15
00300	OXYGEN, DISSOLVED (MG/L)	1008	85	500	423	25
		2180	975	782	423	40 (36) <sup>1</sup>
Water Temperature		Total Obs.	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Total Stations
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	2217	978	804	435	39
		2217	978	804	435	39 (39) <sup>1</sup>
Flow		Total Obs.	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Total Stations
00060	FLOW, STREAM, MEAN DAILY CFS	10	0	0	10	3
00061	FLOW, STREAM, INSTANTANEOUS CFS	1299	193	1105	1	14
00065	STAGE, STREAM (FEET)	472	2	288	182	5
00067	TIDE STAGE CODE	1	1	0	0	1
		1782	196	1393	193	23 (19) <sup>1</sup>

<sup>1</sup>Since a station can have data for more than one of the parameters in the parameter group, the number in the parenthesis is the number of unique stations having data for this parameter group.

Clarity/Turbidity		Total Obs.	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Total Stations
00070	TURBIDITY, (JACKSON CANDLE UNITS)	60	60	0	0	4
00075	TURBIDITY, HELLIGE (PPM AS SILICON DIOXIDE)	15	0	0	15	4
00076	TURBIDITY, HACH TURBIDIMETER (FORMAZIN TURB UNIT)	41	41	0	0	5
00077	TRANSPARENCY, SECCHI DISC (INCHES)	3	0	3	0	3
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	2710	718	1776	216	36
82078	TURBIDITY, FIELD NEPHELOMETRIC TURBIDITY UNITS NTU	42	42	0	0	4
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	1058	757	301	0	11
		3929	1618	2080	231	67 (36) <sup>1</sup>
Nitrate/Nitrogen		Total Obs.	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Total Stations
00600	NITROGEN, TOTAL (MG/L AS N)	501	0	501	0	2
00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	573	0	501	72	4
00607	NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)	476	0	472	4	4
00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	1275	1	988	286	5
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	973	184	680	109	26
00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	300	0	12	288	15
00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	459	184	128	147	20
00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	866	1	861	4	10
00625	NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	2286	181	1738	367	27
00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	601	50	551	0	23
00631	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N)	1093	1	1092	0	14
71846	NITROGEN, AMMONIA, DISSOLVED (MG/L AS NH4)	148	0	0	148	3
71851	NITRATE NITROGEN, DISSOLVED (MG/L AS NO3)	173	0	12	161	14
71856	NITRITE NITROGEN, DISSOLVED (MG/L AS NO2)	163	0	12	151	13
		9887	602	7548	1737	180 (48) <sup>1</sup>
Phosphate/Phosphorus		Total Obs.	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Total Stations
00650	PHOSPHATE, TOTAL (MG/L AS PO4)	18	0	0	18	7
00660	PHOSPHATE, ORTHO (MG/L AS PO4)	215	0	12	203	13
00665	PHOSPHORUS, TOTAL (MG/L AS P)	2130	203	1544	383	31
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	878	1	866	11	13
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	2009	126	1488	395	41
70505	PHOSPHORUS, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	221	0	195	26	7
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	306	88	192	26	9
		5777	418	4297	1062	121 (48) <sup>1</sup>
Sulfates/Total Dissolved Solids/Hardness		Total Obs.	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Total Stations
00900	HARDNESS, TOTAL (MG/L AS CaCO3)	185	161	13	11	19
00945	SULFATE, TOTAL (MG/L AS SO4)	163	140	12	11	18
70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C), (MG/L)	24	1	12	11	13
		372	302	37	33	50 (19) <sup>1</sup>
Bacteria		Total Obs.	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Total Stations
31501	COLIFORM, TOT, MEMBRANE FILTER, IMMED. M-ENDOMED, 35C	10	0	0	10	2
31505	COLIFORM, TOT, MPN, CONFIRMED TEST, 35C (TUBE 31506)	40	0	20	20	8
31506	COLIFORM, TOT, MPN, CONFIRMED TEST, TUBE CONFIG.	2	0	2	0	2
31615	FECAL COLIFORM, MPN, EC MED, 44.5C (TUBE 31614)	126	1	63	62	9
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5C	817	379	392	46	25
		995	380	477	138	46 (31) <sup>1</sup>

<sup>1</sup>Since a station can have data for more than one of the parameters in the parameter group, the number in the parenthesis is the number of unique stations having data for this parameter group.

Toxic Elements		Total Obs.	01/01/85 to 07/17/96	01/01/75 to 12/31/84	Before 01/01/75	Total Stations
01097	ANTIMONY, TOTAL (UG/L AS SB)	2	2	0	0	2
01000	ARSENIC, DISSOLVED (UG/L AS AS)	3	0	3	0	3
01002	ARSENIC, TOTAL (UG/L AS AS)	57	16	37	4	10
01012	BERYLLIUM, TOTAL (UG/L AS BE)	10	10	0	0	6
01025	CADMIUM, DISSOLVED (UG/L AS CD)	3	0	3	0	3
01027	CADMIUM, TOTAL (UG/L AS CD)	62	16	39	7	10
01030	CHROMIUM, DISSOLVED (UG/L AS CR)	3	0	3	0	3
01034	CHROMIUM, TOTAL (UG/L AS CR)	64	15	40	9	10
01040	COPPER, DISSOLVED (UG/L AS CU)	3	0	3	0	3
01042	COPPER, TOTAL (UG/L AS CU)	63	14	40	9	10
01049	LEAD, DISSOLVED (UG/L AS PB)	145	0	145	0	8
01051	LEAD, TOTAL (UG/L AS PB)	209	16	185	8	15
71890	MERCURY, DISSOLVED (UG/L AS HG)	3	0	3	0	3
71900	MERCURY, TOTAL (UG/L AS HG)	61	12	40	9	10
01065	NICKEL, DISSOLVED (UG/L AS NI)	39	0	35	4	8
01067	NICKEL, TOTAL (UG/L AS NI)	21	15	6	0	7
01145	SELENIUM, DISSOLVED (UG/L AS SE)	2	0	2	0	2
01147	SELENIUM, TOTAL (UG/L AS SE)	14	14	0	0	6
01075	SILVER, DISSOLVED (UG/L AS AG)	1	0	1	0	1
01077	SILVER, TOTAL (UG/L AS AG)	4	4	0	0	3
01059	THALLIUM, TOTAL (UG/L AS TL)	10	10	0	0	6
01090	ZINC, DISSOLVED (UG/L AS ZN)	133	0	133	0	8
01092	ZINC, TOTAL (UG/L AS ZN)	202	14	179	9	15
39032	PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE (UG/L)	9	6	3	0	4
39700	HEXACHLOROBENZENE IN WHOLE WATER SAMPLE (UG/L)	3	0	3	0	1
39330	ALDRIN IN WHOLE WATER SAMPLE (UG/L)	13	7	6	0	4
34253	A-BHC-ALPHA, DISSOLVED (UG/L)	1	1	0	0	1
39337	ALPHA BENZENE HEXACHLORIDE IN WHOLE WATER (UG/L)	6	6	0	0	4
39338	BETA BENZENE HEXACHLORIDE IN WHOLE WATER (UG/L)	6	6	0	0	4
39340	GAMMA-BHC(LINDANE), WHOLE WATER (UG/L)	6	6	0	0	4
39341	GAMMA-BHC(LINDANE), DISSOLVED (UG/L)	1	1	0	0	1
34259	DELTA BENZENE HEXACHLORIDE, TOTAL (UG/L)	6	6	0	0	4
39350	CHLORDANE(TECH MIX & METABS), WHOLE WATER (UG/L)	3	0	3	0	1
39300	P,P' DDT IN WHOLE WATER SAMPLE (UG/L)	9	6	3	0	4
34653	P,P'-DDE, DISSOLVED (UG/L)	1	1	0	0	1
39320	P,P' DDE IN WHOLE WATER SAMPLE (UG/L)	9	6	3	0	4
39310	P,P' DDD IN WHOLE WATER SAMPLE (UG/L)	9	6	3	0	4
39380	DIELDRIN IN WHOLE WATER SAMPLE (UG/L)	9	6	3	0	4
39381	DIELDRIN IN FILT. FRAC. OF WATER SAMPLE (UG/L)	1	1	0	0	1
34361	ENDOSULFAN, ALPHA, TOTAL (UG/L)	6	6	0	0	4
34356	ENDOSULFAN, BETA, TOTAL (UG/L)	6	6	0	0	4
34351	ENDOSULFAN SULFATE, TOTAL (UG/L)	6	6	0	0	4
39390	ENDRIN IN WHOLE WATER SAMPLE (UG/L)	9	6	3	0	4
39410	HEPTACHLOR IN WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4
39420	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4
39496	PCB - 1242 PCB SERIES WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4
39488	PCB - 1221 IN THE WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4
39492	PCB - 1232 PCB SERIES WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4
39500	PCB - 1248 PCB SERIES WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4
39508	PCB - 1260 PCB SERIES WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4
34671	PCB - 1016, TOTAL (UG/L)	6	6	0	0	4
39400	TOXAPHENE IN WHOLE WATER SAMPLE (UG/L)	6	6	0	0	4
		1287	301	927	59	250 (19) <sup>1</sup>

<sup>1</sup>Since a station can have data for more than one of the parameters in the parameter group, the number in the parenthesis is the number of unique stations having data for this parameter group.

**NPS Servicewide Inventory and Monitoring Program Level I**

**Water Quality Parameter Inventory Data Evaluation and Analysis:**

**Park Summary: Level I Group Currentness and Distribution**

Parameter Group	Total Obs.	Obs. Since 1985	% Obs. Since 1985	Stations Measuring This Group	% of Total Stations Measuring This Group	Obs. Per Station Measuring This Group	Period of Record For This Group	Observations Per Year of Period of Record
Alkalinity	1080	166	15.4	27	55.1	40.0	11/19/52-07/15/96	24.7
pH	2291	1133	49.5	42	85.7	54.5	11/19/52-07/17/96	52.5
Conductivity	1721	1322	76.8	32	65.3	53.8	11/19/52-07/17/96	39.4
Dissolved Oxygen	2180	975	44.7	36	73.5	60.6	07/21/71-07/17/96	87.2
Water Temperature	2217	978	44.1	39	79.6	56.8	03/06/68-07/17/96	78.2
Flow	1782	196	11.0	19	38.8	93.8	11/19/52-08/24/94	42.7
Clarity/Turbidity	3929	1618	41.2	36	73.5	109.1	01/01/73-07/15/96	166.9
Nitrate/Nitrogen	9887	602	6.1	48	98.0	206.0	11/19/52-07/17/96	226.5
Phosphate/Phosphorus	5777	418	7.2	48	98.0	120.4	03/06/68-07/17/96	203.7
Chlorophyll	0	0	0.0	0	0.0	0.0	No Data For Group	0.0
Sulfates/Total Dissolved Solids/Hardness	372	302	81.2	19	38.8	19.6	11/19/52-07/15/96	8.5
Bacteria	995	380	38.2	31	63.3	32.1	07/21/71-07/17/96	39.8
Toxic Elements	1287	301	23.4	19	38.8	67.7	08/05/71-08/24/94	55.8

**Water Quality Observations  
Outside STORET Edit Criteria for MANA  
(Disposition: X = Discarded, Blank = Retained)**

NPS Station ID	Parameter		Date	Time	Parameter Value	Agency	STORET Station ID	Disposition
MANA0001	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	820614	1140	-18.3000000	21VASWCB	1ABUL010.28	X
MANA0001	00300	OXYGEN, DISSOLVED MG/L	810507	1215	99.5000000	21VASWCB	1ABUL010.28	X
MANA0007	70505	PHOSPHATE,TOTAL,COLORIMETRIC METHOD (MG/L AS P)	751031	1100	19.5000000	21VASWCB	1ACUB003.74	
MANA0007	70507	PHOSPHORUS,IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	751031	1100	17.0000000	21VASWCB	1ACUB003.74	
MANA0017	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	840110		-3.0000000	11NPSWRD	MANA_10	
MANA0017	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	840208		-2.5000000	11NPSWRD	MANA_10	
MANA0021	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	840110		-3.0000000	11NPSWRD	MANA_07	
MANA0024	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	840110		-3.0000000	11NPSWRD	MANA_09	
MANA0024	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	840208		-2.5000000	11NPSWRD	MANA_09	
MANA0027	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	840208		-2.5000000	11NPSWRD	MANA_11	
MANA0028	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	840208		-2.5000000	11NPSWRD	MANA_04	
MANA0030	00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	831229		-3.0000000	11NPSWRD	MANA_05	
MANA0036	00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	740821	1115	66.0000000	112WRD	01656725	
MANA0040	00405	CARBON DIOXIDE (MG/L AS CO2)	790828	1315	261.0000000	112WRD	01656715	
MANA0049	00405	CARBON DIOXIDE (MG/L AS CO2)	790828	1130	303.0000000	112WRD	01656705	

## **APPENDICES**





**Appendix A**  
**Computer Files Transmitted With**  
**Park Baseline Water Quality Data Inventory and Analysis**

Computer disk(s) accompanying this report include up to seven (depending on the presence or absence of certain data elements) compressed (ZIP) files containing digital copies of nearly all the tables, figures, and other materials used to produce this report. To decompress these files, you must use the commonly available shareware program PKUNZIP. The command to type at the DOS prompt is:

PKUNZIP -E *COMPRESS.ZIP FILENAME.EXT*

where *COMPRESS.ZIP* is the name of one of the seven compressed (ZIP) files listed below and *FILENAME.EXT* is the name of the file you wish to extract. If you want to decompress all of the files in *COMPRESS.ZIP*, simply omit the *FILENAME.EXT*. To obtain a listing of all the files compressed into a particular ZIP file, type the following:

PKUNZIP -V *COMPRESS.ZIP* |MORE

where *COMPRESS.ZIP* is the name of one of the seven compressed ZIP files listed below. If a ZIP file spans multiple disks, use the last disk of the series (span) when obtaining a listing of all the files compressed into a particular ZIP file. Once you see the file you wish to obtain, substitute this file name for *FILENAME.EXT* in the first command line above to extract and decompress this particular file.

Included on one of the disk(s) accompanying this report is a program named PRINTZIP. This program will decompress ZIP files which don't span multiple disks and print certain files to a Hewlett-Packard (or compatible) Laser Printer. To use PRINTZIP, however, you must still have a copy of PKUNZIP in a directory listed in your path or in the same directory as the PRINTZIP program. PRINTZIP provides an easy, menu-driven interface for using PKUNZIP to decompress files and then send them to the printer. PRINTZIP allows you to send individual files, groups of files, or all files to the printer. PRINTZIP will not work with ZIP files that span multiple disks.

The following compressed (ZIP) files are included on the disk(s) accompanying this report:

(1)     MANATABS.ZIP

This compressed file contains all the tables presented in the report. The files compressed into this file include:

- (a) MANASITE.DOC     -     Descriptive listing of select fields from the industrial facilities discharges, drinking water intakes, and EPA-USGS stream gages databases.
- (b) MANAAGNC.DOC    -     Contacts for agencies whose data were retrieved within the study area.
- (c) MANAAGNQ.DOC    -     Number of stations, observations, and parameters retrieved by agency code within the study area and park.

- (d) MANAOV0.DOC - Overview of park and retrieved data.
- (e) MANAOV1.DOC - Station period of record table.
- (f) MANAOV2.DOC - Parameter period of record table.
- (g) MANAOV3.DOC - Station/parameter period of record table.
- (h) MANAINV.DOC - Station by station descriptive statistics over the entire period of record and comparison against EPA Water Quality Criteria for each station.
- (i) MANASEAN.DOC - Seasonal and annual water quality descriptive statistics at stations with water quality data meeting the default seasonal and annual criteria.
- (j) MANAEPAS.DOC - EPA Water Quality Criteria comparison for data at all stations combined within the study area.
- (k) MANAIDEA.DOC - Comparison of downloaded STORET data with NPS Servicewide Inventory and Monitoring Program "Level I" water quality parameters.
- (l) MANABAD.DOC - Water quality observation values that were outside the range of one of 190 STORET edit criteria and were either discarded or retained.

All these compressed document files are in ASCII format and contain printer codes appropriate to Hewlett-Packard (or compatible) Laser Printers. While at the DOS prompt, any of these document files may be printed directly to a Hewlett-Packard (or compatible) Laser Printer by using the PRINT command. For example, if the document MANAOV1.DOC is in the subdirectory C:\WATER, you could type: PRINT C:\WATER\MANAOV1.DOC. This will print the file to your local or networked Hewlett-Packard (or compatible) Laser Printer attached to parallel port one (LPT1:). Alternatively, you can use the PRINTZIP program to decompress and print any of these files provided the ZIP file doesn't span multiple disks. These ASCII files can also be imported into word-processed documents, but the printer codes will then have to be removed.

(2) MANAFIGS.ZIP

This compressed file contains graphics files for all the statistical figures (time series plots; annual box and whiskers plots; seasonal box and whiskers plots) in the report in two different formats: Computer Graphic Metafile (CGM) and Hewlett-Packard Printer Control Language (PCL). The files are named with the last three digits of the Station Name followed by the five digit STORET code. The file name extension begins with either a 1 (time series), 2 (annual), or 3 (seasonal) and then either GM for CGM or CL for PCL. For example, 00100300.2GM would denote the file contains an annual box and whiskers plot in CGM format for parameter 00300 (dissolved oxygen) at station MANA0001. While at the DOS prompt, any PCL file can be printed directly to a Hewlett-Packard (or compatible) Laser Printer by using the COPY command. For example, if the graphic 00100300.2CL (an annual box and whiskers plot of parameter 00300, dissolved oxygen, at station MANA0001) is in the subdirectory C:\WATER, you would type: COPY C:\WATER\00100300.2CL LPT1: /B. This will print the file to your local or networked Hewlett-Packard (or compatible) Laser Printer attached to parallel port one (LPT1:). The /B is necessary because the PCL file is in a binary format. Alternatively, you can use the PRINTZIP program to decompress and print any of the PCL files provided the ZIP file doesn't span multiple disks. The CGM files can be imported and/or edited in most graphics packages, including WordPerfect.

(3) MANAPARM.ZIP

This file compresses MANAPARM.DBF which contains all the actual values (raw data) of all the water quality data downloaded from STORET and summarized in the report. The detailed database structure for this file is contained in Appendix B.

(4) MANASITE.ZIP

This compressed file contains up to five geo-referenced, DBASE III+ compatible site (point location) files documenting the location in the study area of water quality monitoring stations, industrial facilities discharges, drinking water intakes, water gages, and water impoundments. These files include:

- (a) MANAWQ.DBF - All water quality monitoring station locations within the project's study area downloaded from STORET.
- (b) MANAIFD.DBF - All municipal and industrial facility discharges within the project's study area downloaded from the IFD database.
- (c) MANADRIN.DBF - All drinking water intakes within the project's study area downloaded from the DRINKS database.
- (d) MANAGAGE.DBF - All water gages within the project's study area downloaded from the GAGES database.
- (e) MANADAMS.DBF - All water impoundments within the project's study area downloaded from the DAMS database.

The absence of any of these files indicates that none of the particular sites were found within the study area. Detailed database structures for each of these files are contained in Appendix B.

(5) MANAMISC.ZIP

This compressed file contains a variety of graphic and document files that are contained in the report. They are grouped into this miscellaneous compressed (ZIP) file because they don't fit neatly into any of the other compressed files. The files contained in this compressed file include:

- (a) MANAEXEC.DOC - WordPerfect Ver. 5.1 copy of the Executive Summary in the report.
- (b) MANATOC.DOC - WordPerfect Ver. 5.1 copy of the report's Table of Contents.
- (c) INTRO.DOC - WordPerfect Ver. 5.1 copy of all the text in the report from the Introduction through the Interpretive Guide to Water Quality Results.
- (d) APPENDIX.DOC - WordPerfect Ver. 5.1 copy of all the Appendices in the report.
- (e) MANAREGI - PCL and CLP (Windows Clipboard) copies of map displaying the regional location of the park and study area.
- (f) MANAWQ - PCL and CLP (Windows Clipboard) copies of park maps displaying water quality station locations within the park's study area. If, due to scaling and aesthetic concerns, multiple maps were needed, these files will have alphabetically ordered suffixes (MANAWQA, MANAWQB, MANAWQC, etc.) and the index map name will end with an ampersand (&).

- (g) MANAIDG - PCL and CLP (Windows Clipboard) copies of park maps displaying locations of industrial facilities discharges, drinking water intakes, and stream gages within the park's study area. If, due to scaling and aesthetic concerns, multiple maps were needed, these files will have alphabetically ordered suffixes (MANAIDGA, MANAIDGB, MANAIDGC, etc.) and the index map name will end with an ampersand (&). If no industrial facilities discharges, drinking water intakes, water gages, or water impoundments exist within the park's study area, these files will not be in the compressed (ZIP) file.
- (h) MANASEHY - PCL and CLP (Windows Clipboard) copies of the hydrographs or other materials used by WRD staff as the basis for a first attempt at a seasonal analysis of the park's water quality data.

Other materials may also be included in this miscellaneous compressed (ZIP) file as warranted by conditions at the park. As with MANAFIGS.ZIP and MANATABS.ZIP, you can use the PRINTZIP program to print any of the PCL files in MANAMISC.ZIP provided the ZIP file doesn't span multiple disks. You should not, however, use PRINTZIP to print the WordPerfect document files. The CLP (Windows Clipboard) files can be imported (pasted) and/or edited in most Windows-based word processors and graphics packages.

(6) MANARF3.ZIP

This compressed file contains the Environmental Protection Agency's River Reach File Ver. 3.0 provisional data for the USGS catalog unit(s) encompassing the study area. The attribute data exist in both ASCII and DBASE III+ format, while the geographic traces exist in ASCII format. This compressed file contains four files for each catalog unit that touches the study area. Catalog units are identified by unique 8-character numeric names which identify the region, subregion, accounting unit, and catalog unit. Examples (your 8-character numeric names will be different) of the file types included in this compressed file are:

- (a) 12345678.RF3 - ASCII formatted attribute file from the River Reach File for all hydrographic traces within the catalog unit.
- (b) 12345678.DBF - DBASE III+ formatted attribute file from the River Reach File for all hydrographic traces within the catalog unit.
- (c) 12345678.TRC - ASCII formatted geographic file from the River Reach File containing digital, geo-referenced descriptions of all hydrographic traces within the catalog unit at a scale of 1:100,000 suitable for import into a geographic information system.
- (d) 12345678.CUB - ASCII formatted geographic file from the River Reach File containing a digital, geo-referenced description of the catalog unit boundary suitable for import into a geographic information system.

Detailed database structures for RF3-related files are contained in Appendix B.

(7) MANAWQMW.ZIP

Between 2000 and 2002, all Baseline Water Quality Data Inventory and Analysis Reports were compiled or re-compiled in Microsoft Word 2000 (Ver. 9.0) format. This complete, digital version of the report will be made available through various means, including the Internet. Although the reports can be opened in Microsoft Word 1997 (Ver. 8.0), the time series and annual and seasonal box-plots may not be centered appropriately on a page due to discrepancies with how Word 2000 formats pictures and how Word 1997 formatted pictures. Consequently, Word 2000 is the recommended software for viewing the report. Prior to printing the report from Word, be sure to enable "Print Text as Graphics" or "Print True Type Font as Graphics" in the Printer Properties. This ensures a more faithful reproduction of the maps included in the Word document.

The Microsoft Word version of the Baseline Water Quality Data Inventory and Analysis Report may differ slightly from the original analog version. Reports issued during 1994-1996 didn't have as many "bells-and-whistles" as subsequent reports. In compiling digital Microsoft Word versions of these earlier reports, attempts were made to bring these 1994-1996 reports up to the current standard wherever feasible and practicable. Unfortunately, some changes were not feasible or practicable. For example, water quality criteria screens were added or modified over time when newer criteria became available. The digital Microsoft Word version of Appendix F presents the latest criteria screening parameters and values. Some of these parameters and/or values may not have been screened against in the EPA water quality criteria analyses for each station and the entire study area in the 1994-1996 analog versions of the report. Similarly, the Introduction, Methodology, and Interpretive Guide to Water Quality Results may mention certain features that aren't included in the 1994-1996 reports. Additionally, to prepare a Microsoft Word version of this report, data were processed through different versions of software than used originally. Consequently, some results presented in the Overview and Executive Summary may differ slightly from those presented in the analog report (eg. # of In Park and Longer Term Stations).



## Appendix B

### Water Quality Database File Structures

The following table provides the DBASE III+ database field structure for all the water quality parameter data downloaded from STORET. This data will allow parks or other interested parties to replicate the statistical analyses and graphics contained in this report; perform more sophisticated analyses; or to establish a baseline park water quality database.

<b>Parameter Data File: MANAPARM.DBF in MANAPARM.ZIP</b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
NPSSTATID	1	8	8	NPS Station ID (NPS park code + 4 digit sequence number)
BEGDATE	9	14	6	Measurement Start Date [yymmdd]
BEGTIME	15	18	4	Measurement Start Time [hhmm]
PARMCODE	19	23	5	STORET Parameter Code
PARMVALU	24	39	16.7	Parameter Value
REMARK	40	40	1	Parameter Remark Value
				A=Value is Mean of 2 or More Determinations
				B=Results Based Upon Colony Counts Outside Acceptable Range
				C=Value Calculated
				D=Field Measurement
				E=Extra Sample Taken in Compositing Process
				F=Female Species
				G=Maximum of 2 or More Determinations
				H=Based on Field Kit Determination
				I=Value is Less Than Practical Quantitation Limit and Greater Than or Equal to the Method Detection Limit
				J=Estimated, Not the Result of Analytic Measurement
				K=Off-scale Low, Actual Value Not Known, But Known to be Less Than Value Shown
				L=Off-scale High, Actual Value Not Known, But Known to be Greater Than Value Shown

<b>Parameter Data File: MANAPARM.DBF in MANAPARM.ZIP</b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
				M=Presence Verified, But Not Quantified, Below Quantification Limit; For Species, Male; For Oxygen Reduction Potential, Indicates a Negative Value
				N=Presumptive Evidence of Presence
				O=Analysis Lost
				P=Too Numerous to Count
				Q=Exceeded Normal Holding Time
				R=Significant Rain in Last 48 Hours
				S=Laboratory test
				T=Less Than Detection Criteria
				U=Analyzed For But Not Detected, Value is Detection Limit For Process Used; If Species, Undetermined
				V=Analyte was Detected in Sample and Method Blank
				W=Less Than Lowest Value Reportable Under Remark "T"
				X=Quasi Vertically-Integrated Sample
				Y=Analysis of Unpreserved Sample
				Z=Too Many Colonies Were Present to Count (TNTC), Value Represents Filtration Value
				\$=Calculated By Retrieval Software
MEDIA	41	46	6	Sample Media
DEPTH	47	55	9.3	Depth of Sample [in feet]
ENDDATE	56	61	6	Measurement End Date [yymmdd] [all composite samples]
ENDTIME	62	65	4	Measurement End Time [hhmm] [all composite samples]
SAMPTYPE	66	69	4	Type of Sample ["sophisticated" composite samples]
				C=Continuous Collection
				G=Collection of Individual Grab Samples
				GNxx=xx is the Number of Individual Grab Samples
				B=N/A



<b>Parameter Data File: MANAPARM.DBF in MANAPARM.ZIP</b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
COMPTYPE	70	70	1	Composite Value Type ["sophisticated" composite samples]
				A=Average
				H=Maximum
				L=Minimum
				N=Number of Observations
				#=Number of Observations
				S=Standard Deviation
				U=Sum of Squares
				V=Variance
				C=Coefficient of Error
				X=Coefficient of Variance
				E=Skewness
				F=Kurtosis
				Z=Number of Observations That Exceed an Established Limit
				%=Precision
				\$=Accuracy
				B=N/A
				D=Indicates Replicate Sample
COMPST	71	71	1	Composite Space/Time Indicator
				S=Space
				T=Time
				B=Space and Time
				F=Flow Proportional
				1-9=Replicate Number

Note: DBASE III+ record lengths will be one greater than the last stop column displayed (71 here) because DBASE III+ reserves the first space/column of every record for a deletion flag. Hence, DBASE III+ will display a record length of 72 for this database.

The following table provides the DBASE III+ database field structure for all the water quality station locations downloaded from STORET. As this file is geo-referenced, it should import easily into the park's Geographic Information System.

<b>Water Quality Station Data File: MANAWQ.DBF in MANASITE.ZIP</b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
NPSSTATID	1	8	8	NPS Station ID (NPS park code + 4 digit sequence number)
AGENCY	9	16	8	Agency Code of Station Owner
STORIDP	17	31	15	STORET Primary Station Code
STORIDS1	32	43	12	STORET First Secondary Station Code
STORIDS2	44	55	12	STORET Second Secondary Station Code
STORIDS3	56	65	10	STORET Third Secondary Station Code
LATITUDE	66	73	8	Station Latitude [degrees:minutes:seconds]
LONGITUDE	74	82	9	Station Longitude [degrees:minutes:seconds]
LAT	83	93	11.6	Station Latitude [decimal degrees, (-) below equator]
LON	94	104	11.6	Station Longitude [decimal degrees, (-) western hemisphere]
LLPREC	105	105	1	Latitude/Longitude Precision Code
RMI	106	329	224	River Mile Index
STATLOC	330	377	48	Station Location Description
CNTYCODE	378	382	5	FIPS State/County Code
STNAME	383	398	16	State Name
CNTYNAME	399	418	20	County Name
HYDUNIT	419	426	8	Hydrologic Unit Code (MAJ/MIN/SUB = Catalog Unit)
MAJBASN	427	450	24	Major Basin Name
MINBASN	451	490	40	Minor Basin Name
STATTYPE	491	550	60	Station Type
STORDATE	551	556	6	Date Station was Stored in STORET
RF1INDEX	557	567	11	RF1 Reach Number Location [2]
RF1MILE	568	575	8.3	Mile Point on RF1 Reach [2]
RF1LOC	576	578	3	Indicates the Location as ON or OFF RF1 Reach [2]
RF1DIST	579	584	6.2	Distance From RF1 Reach

<b>Water Quality Station Data File: MANAWQ.DBF in MANASITE.ZIP</b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
RF3INDEX	585	601	17	RF3 Reach Number Location [3]
RF3MILE	602	607	6.2	Mile point on RF3 Reach [3]
RF3LOC	608	610	3	Indicates the Location as ON or OFF RF3 Reach [2]
RF3DIST	611	616	6.2	Distance From RF3 Reach
DEPH2O	617	620	4	Depth of Water at Station Location [in feet]
ELEV	621	625	5	Station Elevation
ECOREG	626	628	3	ECO Region
H2OBODY	629	678	50	Waterbody ID
AQUIFERS	679	718	40	Aquifer Description
STATDESC1	719	790	72	Station Sentence Description
STATDESC2	791	862	72	Station Sentence Description
STATDESC3	863	934	72	Station Sentence Description
STATDESC4	935	1006	72	Station Sentence Description
STATDESC5	1007	1078	72	Station Sentence Description
STATDESC6	1079	1150	72	Station Sentence Description
STATDESC7	1151	1222	72	Station Sentence Description
STATDESC8	1223	1294	72	Station Sentence Description
STATDESC9	1295	1366	72	Station Sentence Description
STATDESC10	1367	1438	72	Station Sentence Description
STATDESC11	1439	1510	72	Station Sentence Description
STATDESC12	1511	1582	72	Station Sentence Description
STATDESC13	1583	1654	72	Station Sentence Description
STATDESC14	1655	1726	72	Station Sentence Description
STATDESC15	1727	1798	72	Station Sentence Description
STATLOCKED	1799	1799	1	Station Locked (Logical) True/False

The following table provides the DBASE III+ database field structures for the EPA Industrial Facilities Discharge database. As this file is geo-referenced, it should import easily into the park's Geographic Information System.

<b>Industrial Facilities Discharges File: MANAIFD.DBF in MANASITE.ZIP</b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
SITEID	1	9	9	Site Identifier (NPDES Number)
LATITUDE	10	17	8	Facility Latitude (Degrees:Minutes:Seconds)
LONGITUDE	18	26	9	Facility Longitude (Degrees:Minutes:Seconds)
LAT	27	37	11.6	Facility Latitude (decimal degrees, (-) below equator)
LON	38	48	11.6	Facility Longitude (decimal degrees, (-) west. hem.)
RF1INDEX	49	59	11	RF1 Reach Number Location
RF1MILE	60	65	6.2	Mile Point on RF1 Reach
RF1DIST	66	71	6.2	Distance From RF1 Reach
RF3INDEX	72	88	17	RF3 Reach Number Location
RF3MILE	89	94	6.2	Mile Point on RF3 Reach
RF3DIST	95	100	6.2	Distance From RF3 Reach
ADR	101	125	25	Address
BFL	126	132	7.2	Total Direct Combined C&P Flow (1000 GPD)
CCFLG	133	133	1	Coastal County Flag "Y"/"N"/"E"=Estuary
CC1	134	138	5	City Code #1 (EPA Code)
CFL	139	145	7.2	Total Direct Cooling Flow (1000 GPD)
CNC	146	148	3	County Code (FIPS)
CTY	149	168	20	City Name
CZIP	169	177	9	Canadian Zip Code
DNB	178	186	9	Dunn & Bradstreet Number
DNBFLG	187	187	1	Dunn & Bradstreet PCS Source Flag
EGF	188	202	15.4	Flow From Effluent Guidelines (1000 GPD)
EGS	203	208	6	Effluent Guidelines Subcategory
EXPDT	209	216	8	Expiration Date (mm/dd/yy)
E308SN	217	220	4	Effluent Guidelines Survey Number
FAC	221	229	9	SCS Facility Identifier (Cross-Reference)
FDS	230	232	3	Facility Data Source

<b>Industrial Facilities Discharges File: MANAIFD.DBF in MANASITE.ZIP</b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
FFL	233	239	7.2	Total Facility Flow (1000 GPD)
FHF	240	240	1	Fac. Hit Flag (Reach File) V=Versar Assumed
FLOTYP	241	243	3	I=Blow Down, R=Bottom Ash, S=Fly Ash
FLR	244	250	7.2	Flow Recvd-Industrial (1000 GPD) Permit Data
FRDS	251	259	9	FRDS ID# - XREF To Water Supply
FRW	260	289	30	Facility Receiving Water Name
FS1	290	293	4	Facility SIC Code (From PCS)
FS2	294	297	4	Facility SIC Code #1
FS3	298	301	4	Facility SIC Code #2
FS4	302	305	4	Facility SIC Code #3
FS5	306	309	4	Facility SIC Code #4
FUD	310	317	8	Facility Level Last Date Updated (mm/dd/yy)
IACC	318	318	1	Inactive/Active Indicator ("I" or "A")
ICAT	319	320	2	WQAB Industrial Category
ICAT2	321	322	2	WQAB Industrial Category 2
ICAT3	323	324	2	WQAB Industrial Category 3
IFL	325	331	7	Total Indirect Flow (1000 GPD)
IFT	332	332	1	Illinois Facility Type (A thru Z)
IG1	333	334	2	Facility Industrial Group #1
IG2	335	336	2	Facility Industrial Group #2
IJCN	337	346	10	Canadian Record Identifier
INACT	347	353	7	Inactive/Rescinded P=Based on Permit;A=Actual
INDCNT	354	357	4	Computed Number of Indirect Dischargers
LATLON	358	372	15	Polygon Retrieval Lat/Long.
MAJ	373	373	1	Major-Minor Flag (From PCS)
MAPID	374	377	4	Map Identifier
MJMN	378	381	4	Major/Minor Basin (EPA-STORET)
NAM	382	441	60	Facility Name
NDC	442	444	3	Number of Discharges (Pipes)

<b>Industrial Facilities Discharges File: MANAIFD.DBF in MANASITE.ZIP</b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
NDSFLO	445	451	7.2	NEEDS Flow (1000 GPD)
NDSIFLO	452	458	7.2	NEEDS Industrial Flow (1000 GPD)
NID	459	462	4	Number of Indirect Dischargers
NPC	463	463	1	NEEDS Pre-Treatment Code "Y"=Yes, "N"=No
NPS	464	464	1	NPDES Facility Source/Status
NSN	465	473	9	NEEDS Survey Number
NTC	474	474	1	NEEDS Treatment Code
OCP	475	480	6	Organic Chemical Producers ID Number
ODESCC	481	481	1	ODES Coastal County "Y"=Yes; "N"=No
OFL	482	488	7.2	Total Non-Direct Other Flow (1000 GPD)
OWN	489	491	3	Ownership Code
PFL	492	498	7.2	Total Direct Process Flow (1000 GPD)
REG	499	500	2	EPA Region
REGKEY	501	504	4	Region Key
RSLOFLO	505	511	7.2	Receiving Stream Low Flow
RSMNFLO	512	518	7.2	Receiving Stream Mean Flow
STA	519	520	2	State Postal Abbreviation
STAID	521	535	15	State Identifier
STC	536	537	2	State Code (FIPS)
STCITY	538	544	7	State/City Code
TFLOW	545	551	7.2	Type Flow (1000 GPD)
UFL	552	558	7.2	Total Direct Undefined Flow (1000 GPD)
XEGS	559	561	3	Effluent Guidelines Subcat Index
XKEY	562	562	1	"1","2","3","4","5","6","7","8","9"
XNME	563	565	3	GLP,DIR,F2C,ENF,CET,LAG,PPB,M85,M86
ZIP	566	570	5	Zip Code

The following table provides the DBASE III+ database field structures for drinking water intakes from the EPA DRINKS database. As this file is geo-referenced, it should import easily into the park's Geographic Information System.

<b><u>Drinking Water Intakes File: MANADRIN.DBF in MANASITE.ZIP</u></b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
SITEID	1	20	20	Site Identifier
LATITUDE	21	28	8	Facility Latitude (Degrees:Minutes:Seconds)
LONGITUDE	29	37	9	Facility Longitude (Degrees:Minutes:Seconds)
LAT	38	48	11.6	Facility Latitude (decimal degrees, (-) below equator)
LON	49	59	11.6	Facility Longitude (decimal degrees, (-) west. hem.)
RF1INDEX	60	70	11	RF1 Reach Number Location
RF1MILE	71	76	6.2	Mile Point on RF1 Reach
RF1DIST	77	82	6.2	Distance From RF1 Reach
RF3INDEX	83	99	17	RF3 Reach Number Location
RF3MILE	100	105	6.2	Mile Point on RF3 Reach
RF3DIST	106	111	6.2	Distance From RF3 Reach
AQCD	112	115	4	Aquifer Code
ASC	116	138	23	STORET Agency/Station Code
AVGD	139	142	4	Average Depth
BUY	143	143	1	Purchase Code
CC1	144	148	5	City Code #1 (EPA Code)
CNC	149	151	3	County Code (FIPS)
CNME	152	166	15	Contact Name
CNN	167	186	20	County Name
CTITLE	187	201	15	Contact Title
CTY	202	221	20	City Name
DUD	222	229	8	Date of Update
FRDS	230	238	9	FRDS ID# - Cross-Reference
GEOAG	239	258	20	Geologic Age
GEOCDE	259	261	3	Geologic Age Code
IDAT	262	269	8	Date (mm/dd/yy)

<b><u>Drinking Water Intakes File: MANADRIN.DBF in MANASITE.ZIP</u></b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
INTAKET	270	270	1	Type Source G/S/B
INTRVWR	271	285	15	Interviewer
MAXD	286	289	4	Maximum Depth
MILES	290	296	7.2	Miles
MIND	297	300	4	Minimum Depth
NAME	301	320	20	Name
NPD	321	329	9	NPDES# XREF to IFD Database
NWLS	330	332	3	Number of Wells
OWN	333	335	3	Ownership
PAVGF	336	342	7.2	Production Avg. Daily (Gal/Day)
PCTSUP	343	345	3	%Surface / %Ground
PHONE	346	355	10	Telephone Number
PMAXF	356	362	7.2	Production Max. Daily (Gal/Day)
POPSV	363	371	9	Population Served
REG	372	373	2	EPA Region
SHLAT	374	379	6	Sitehelp Latitude (DDMMSS)
SHLNG	380	386	7	Sitehelp Longitude (DDDMMSS)
SHMILES	387	393	7.2	Sitehelp Miles
SHNME	394	403	10	Sitehelp Source Name
SHPCT	404	410	7.2	Sitehelp Percent of Reach Miles
SRC	411	413	3	Sitehelp Source Code
STA	414	415	2	State Abbreviation
STC	416	417	2	State Code (FIPS)
TUF	418	424	7.2	Total Utility Flow
TYPCDE	425	425	1	Type Code
UHF	426	426	1	Utility Hit Flag (Reach File)
VCDE	427	427	1	Versar Code='V'=>25K; '*'=<25K POPSVD
WFPC	428	428	1	Wellfield Precision Code
WFTYP	429	429	1	Well Type (Cassing,Artesian,Infiltration,etc.)



<b><u>Drinking Water Intakes File: MANADRIN.DBF in MANASITE.ZIP</u></b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
WUN	430	449	20	Water Utility Name

The following table provides the DBASE III+ database field structures for the Water Gage database. As this file is geo-referenced, it should import easily into the park's Geographic Information System.

<b><u>Water Gage File: MANAGAGE.DBF in MANASITE.ZIP</u></b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
SITEID	1	20	20	Site Identifier
LATITUDE	21	28	8	Facility Latitude (DDMMSS)
LONGITUDE	29	37	9	Facility Longitude (DDDMMSS)
LAT	38	48	11.6	Facility Latitude (decimal degrees, (-) below equator)
LON	49	59	11.6	Facility Longitude (decimal degrees, (-) west. hem.)
RF1INDEX	60	70	11	RF1 Reach Number Location
RF1MILE	71	76	6.2	Mile Point on RF1 Reach
RF1DIST	77	82	6.2	Distance From RF1 Reach
RF3INDEX	83	99	17	RF3 Reach Number Location
RF3MILE	100	105	6.2	Mile Point on RF3 Reach
RF3DIST	106	111	6.2	Distance From RF3 Reach
JAN	112	118	7.2	Monthly Flow - January
FEB	119	125	7.2	Monthly Flow - February
MAR	126	132	7.2	Monthly Flow - March
APR	133	139	7.2	Monthly Flow - April
MAY	140	146	7.2	Monthly Flow - May
JUN	147	153	7.2	Monthly Flow - June
JUL	154	160	7.2	Monthly Flow - July
AUG	161	167	7.2	Monthly Flow - August
SEP	168	174	7.2	Monthly Flow - September
OCT	175	181	7.2	Monthly Flow - October
NOV	182	188	7.2	Monthly Flow - November
DEC	189	195	7.2	Monthly Flow - December
RGN	196	197	2	Region Code
AREA	198	204	7.2	Drainage Area (SQ.MI.)
DUD	205	212	8	Date of Update

<b><u>Water Gage File: MANAGAGE.DBF in MANASITE.ZIP</u></b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
FBCF	213	213	1	Flag - Basic Characteristic File ('Y')
FDFE	214	214	1	Flag - Daily Flows File ('Y')
FQMINV	215	224	10	IHS Pt. Files Index
GHF	225	225	1	Hit Flag (Reach File)
ICDE	226	226	1	Integrity Code
LFVEL	227	233	7.2	Low Flow Velocity
METHOD	234	236	3	Calculation Method Code
MFVEL	237	243	7.2	Mean Flow Velocity
MNFLO	244	250	7.2	USGS Mean Annual Flow
NME	251	298	48	Station Name
SHLAT	299	304	6	Sitehelp Latitude (DDMMSS)
SHLNG	305	311	7	Sitehelp Longitude (DDDMMSS)
SHMILES	312	318	7.2	Sitehelp Miles
SHNME	319	328	10	Sitehelp Source Name
SHPCT	329	335	7.2	Sitehelp Percent of Reach Miles
SITE	336	337	2	Site Location
SRC	338	340	3	Sitehelp Source Code
STCTY	341	345	5	State/County Numeric Code
SVTEN	346	352	7.2	USGS 7-10 Year Flow
BEG_WYR	353	356	4	Beginning Water Year
END_WYR	357	359	4	Ending Water Year
ELEV	361	368	8.2	Elevation (Feet)
WELL_DP	369	376	8.2	Well Depth (Feet)

The following table provides the DBASE III+ database field structures for the Water Impoundment database. As this file is geo-referenced, it should import easily into the park's Geographic Information System.

<b>Water Impoundment File: MANADAMS.DBF in MANASITE.ZIP</b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
SITEID	1	7	7	Site Identifier
SOURCE	8	10	3	Source of Data
ST1	11	12	2	Primary State Code Abbreviation
STCTY1	13	17	5	State/County Numeric Code
NAME	18	47	30	Official Name of Dam
LATITUDE	48	53	6	Facility Latitude (DDMMSS)
LONGITUDE	54	60	7	Facility Longitude (DDDMMSS)
LAT	61	70	10.6	Facility Latitude (decimal degrees, (-) below equator)
LON	71	81	11.6	Facility Longitude (decimal degrees, (-) west. hem.)
INME	82	111	30	Impoundment Name
RNME	112	139	28	River, Stream, or Tributary Name on Which Dam Built
CUSEGMI	140	149	10	Catalog Unit, Segment, and Segment Length
REGN	150	151	2	Water Resources Council Region Code
RGBSN	152	155	4	Water Resources Region/Basin Code
CU	156	163	8	Catalog Unit
SEG	164	166	3	Reach Segment of Dam
SEGL	167	171	5.2	Reach Segment Length
PURP	172	172	1	Major Purpose of Dam
				I=Irrigation
				H=Hydroelectric
				N=Navigation
				S=Water Supply
				R=Recreation
				P=Stock/Farm Pond
				D=Debris Control
				F=Flood Control

<b>Water Impoundment File: MANADAMS.DBF in MANASITE.ZIP</b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
				O=Other
FRF3	173	189	17	RF3 Reach Number Location
FRF3MI	190	194	5	Mile Point on RF3 Reach
PURPKEY	195	195	1	Purpose Key
PUR2	196	196	1	Purpose of Dam 2 (See Above)
PUR3	197	197	1	Purpose of Dam 3 (See Above)
PUR4	198	198	1	Purpose of Dam 4 (See Above)
PUR5	199	199	1	Purpose of Dam 5 (See Above)
PUR6	200	200	1	Purpose of Dam 6 (See Above)
PUR7	201	201	1	Purpose of Dam 7 (See Above)
PUR8	202	202	1	Purpose of Dam 8 (See Above)
PUR9	203	203	1	Purpose of Dam 9 (See Above)
PUR10	204	204	1	Purpose of Dam 10 (See Above)
TYPDAM	205	206	2	Major Dam Portion Type
				RE=Earth
				VA=Vaulted Arch
				CD=Buttress
				PG=Gravity
				ER=Rockfill
				MV=Multi-Arch
				OT=Other
YRCMP	207	210	4	Year Dam Completed
SHGT	211	214	4	Structural Height (Feet)
HHGT	215	218	4	Hydraulic Height (Feet)
VNORM	219	236	8	Normal Storage of Impoundment (Acre-Feet)
VMAX	227	234	8	Maximum Storage of Impoundment (Acre-Feet)
LCRST	235	239	5	Crest Length of Dam (Feet)
TSPL	240	240	1	Spillway Type
				C=Controlled

<b>Water Impoundment File: MANADAMS.DBF in MANASITE.ZIP</b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
				U=Uncontrolled
				N=None
				X=Unknown
WSPL	241	244	4	Dam Spillway Width (Feet)
QMAX	245	251	7	Maximum Spillway Discharge (CFS)
PINS	252	258	7.2	Quantity of Installed Power (Megawatts)
PPRO	259	265	7.2	Quantity of Proposed Power (Megawatts)
LOCK	266	266	1	Number of Navigational Locks
OWNR	267	290	24	Name of Impoundment Owner
PFOWN	291	291	1	Ownership Code
				N=Non-Federal
				G=Federal Government Agency
				C=Corps of Engineers
				X=Unknown
FEDR	292	292	1	Federally Regulated (Y=Yes, N=No, X=Unknown)
FLND	293	293	1	Private Dam on Federal Land (Y=Yes, N=No, X=Unknown)
SCSA	294	294	1	Type of Soil Conservation Service Assistance
				N=No Assistance
				T=Technical Assistance
				F=Financial Assistance
				B=Both Technical and Financial Assistance
				X=Unknown
DHAZ	295	295	1	Degree of Downstream Hazard
				1=High (More than a Few Lives Lost; Excessive Economic Loss)
				2=Significant (A Few Lives Lost; Appreciable Economic Loss)
				3=Low (No Lives Expected Lost; Minimal Economic Loss)
DCITY	296	319	24	Nearest Downstream City

<b><u>Water Impoundment File: MANADAMS.DBF in MANASITE.ZIP</u></b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
POP	320	326	7	Population of Downstream City
DMILE	327	331	5.2	Distance of Downstream City From Dam (Miles)
RET	332	342	11.2	Retention Coefficient (Dimensionless)
MIX	343	353	11.2	Mixing Coefficient (Dimensionless)
SAREA	354	361	8	Surface Area of Impoundment (Acres)
SAFLG	362	362	1	Surface Area Flag (C=Calc., M=Measured, O=Other)
ILNTH	363	367	5	Length of Impoundment (Feet)
ILFLG	368	368	1	Impoundment Length Flag (C=Calc., M=Measured, O=Other)
UPKEY	369	374	6	Update Key (YYMMDD)

The following table provides the ASCII and DBASE III+ database field structures for the EPA River Reach File Ver. 3.0 (1:100,000 scale hydrography) attributes. The actual numeric file names will vary depending on the catalog unit(s). This information can be readily incorporated into the park's Geographic Information System.

<b><u>RF3 Structure File: 12345678.RF3 and 12345678.DBF in MANARF3.ZIP</u></b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
CATUNIT	1	8	8	Cataloging Unit (CU)
SEGM	9	12	4	Segment Number (SEG)
MI	13	17	5.2	Mile Point (MI)
UPMI	18	22	5.2	Upstream Mile Pt.
SEQNO	23	33	11.6	Hydro Sequence No.
RFLAG	34	34	1	Reach Flag (0,1)
OWFLAG	35	35	1	Open Water Flag (0,1)
TFLAG	36	36	1	Terminal Flag (0,1)
SFLAG	37	37	1	Start Flag (0,1)
RCHTYPE	38	38	1	Reach Type Code
LEV	39	40	2	Stream Level
JUNC	41	42	2	Level of Downstream Reach
DIVERGENCE	43	43	1	Divergence Code
STARTCU	44	51	8	Start CU
STRTSG	52	55	4	Start SEG
STOPCU	56	63	8	Stop CU
STOPSG	64	67	4	Stop SEG
USDIR	68	68	1	Upstream Direction
TERMID	69	73	5	Terminal Stream ID
TRMBLV	74	74	1	Terminal Base Level
PNAME	75	104	30	Primary Name
PNMCD	105	115	11	Primary Name Code
CNAME	116	145	30	Complement Name
CNMCD	146	156	11	Complement Name Code



<b><u>RF3 Structure File: 12345678.RF3 and 12345678.DBF in MANARF3.ZIP</u></b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
OWNAME	157	186	30	Open Water Name
OWNMCD	187	197	11	Open Water Name Code
DSCU	198	205	8	Downstream CU
DSSEG	206	209	4	Downstream SEG
DSMI	210	214	5.2	Downstream MI
CCU	215	222	8	Complement CU
CSEG	223	226	4	Complement SEG
CMILE	227	231	5.2	Complement MI
CDIR	232	232	1	Complement Direction
ULCU	233	240	8	Upstream Left CU
ULSEG	241	244	4	Upstream Left SEG
ULMI	245	249	5.2	Upstream Left MI
URCU	250	257	8	Upstream Right CU
URSEG	258	261	4	Upstream Right SEG
URMI	262	266	5.2	Upstream Right MI
SEGL	267	272	6.2	Reach Length (Miles)
RFORGFLAG	273	273	1	RF Orgin flag(1,2,3)
ALTPNMCD	274	281	8	Alt. Primary Name Code
ALTOWNMC	282	289	8	Alt. OW Name Code
DLAT	290	297	8.4	Downstream Latitude
DLONG	298	305	8.4	Downstream Longitude
ULAT	306	313	8.4	Upstream Latitude
ULONG	314	321	8.4	Upstream Longitude
MINLAT	322	329	8.4	Minimum Latitude
MINLONG	330	337	8.4	Minimum Longitude
MAXLAT	338	345	8.4	Maximum Latitude
MAXLONG	346	353	8.4	Maximum Longitude
NDLGREC	354	357	4	No. of DLG Records
LLIKEY1	358	367	10	Starting DLG LL Key1

<b><u>RF3 Structure File: 12345678.RF3 and 12345678.DBF in MANARF3.ZIP</u></b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
LL2KEY1	368	377	10	Ending DLG LL Key1
LL1KEY2	378	387	10	Starting DLG LL Key2
LL2KEY2	388	497	10	Ending DLG LL Key2
LL1KEY3	398	407	10	Starting DLG LL Key3
LL2KEY3	408	417	10	Ending DLG LL Key3
LL1KEY4	418	427	10	Starting DLG LL Key4
LL2KEY4	428	437	10	Ending DLG LL Key4
LL1KEY5	438	447	10	Starting DLG LL Key5
LL2KEY5	448	457	10	Ending DLG LL Key5
LL1KEY6	458	467	10	Starting DLG LL Key6
LL2KEY6	468	477	10	Ending DLG LL Key6
LL1KEY7	478	487	10	Starting DLG LL Key7
LL2KEY7	488	597	10	Ending DLG LL Key7
LL1KEY8	498	507	10	Starting DLG LL Key8
LL2KEY8	508	517	10	Ending DLG LL Key8
LL1KEY9	518	527	10	Starting DLG LL Key9
LL2KEY9	528	537	10	Ending DLG LL Key9
LL1KEY10	538	547	10	Start DLG LL Key 10
LL2KEY10	548	557	10	Ending DLG LL Key10
LN1AT2	558	561	4	DLG Line Attr. 1
LN2AT2	562	565	4	DLG Line Attr. 2
AREA1	566	569	4	DLG Area ID 1
AREA2	570	573	4	DLG Area ID 2
AR1AT2	574	577	4	DLG Area Attribute
AR1AT4	578	581	4	DLG Area Attribute
AR2AT2	582	585	4	DLG Area Attribute
AR2AT4	586	589	4	DLG Area Attribute
UPDATE1	590	595	6	Update Date #1 (mmddyy)
UPDTC1	596	603	8	Update Type Code #1

<b><u>RF3 Structure File: 12345678.RF3 and 12345678.DBF in MANARF3.ZIP</u></b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
UPDTSRC1	604	611	8	Update Source #1
UPDATE2	612	617	6	Update Date #2 (mmddyy)
UPDTCDC2	618	625	8	Update Type Code#2
UPDTSRC2	626	633	8	Update Source #2
UPDATE3	634	639	6	Update Date #3 (mmddyy)
UPDTCDC3	640	647	8	Update Type Code #3
UPDTSRC3	648	655	8	Update Source #3
DIVCU	656	663	8	Divergent CU
DIVSEG	664	667	4	Divergent SEG
DIVMILE	668	672	5.2	Divergent MI
DLGID	673	678	6	DLG Number Special Use For Internal State Codes
FILLER	678	685	7	Filler: Future Use

**Note:** The structure for the .DBF file varies slightly from the RF3 structure displayed here in that the fields UPDATE1, UPDATE2, and UPDATE3 have a width of 8 and the last two fields, DLGID and FILLER, have been replaced with a field named ID of length 17. This ID field combines the CATUNIT, SEGM, and MI fields.

The following table provides the ASCII database field structures for the EPA River Reach File Ver. 3.0 (1:100,000 scale hydrography) traces. The actual numeric file names will vary depending on the catalog unit(s). This file contains the actual hydrographic network and is suitable for conversion into a variety of Geographic Information System formats.

<b>RF3 Trace File: 12345678.TRC in MANARF3.ZIP</b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
(Header Record)				
CATUNIT	1	8	8	Cataloging Unit
SEGM	9	12	4	Segment Number
MI	13	17	5.2	Mile Point
NPTS	18	21	4	Number of Lat/Lon Coordinates
(Coordinate Record)				
LATITUDE	1	8	8.4	Latitude in Decimal
LONGITUDE	9	16	8.4	Longitude in Decimal
FILLER	17	21	5	

The following table provides the ASCII database field structures for the EPA River Reach File Ver. 3.0 (1:100,000 scale hydrography) catalog unit boundary file. The actual numeric file names will vary depending on the catalog unit(s). This file contains the actual catalog unit boundary and is suitable for conversion into a variety of Geographic Information System formats.

<b>Catalog Unit Boundary File: 12345678.CUB in MANARF3.ZIP</b>
First Line = Catalog Unit Number (8 Characters)
Subsequent Lines:
L=DDMMSS,L=DDMMSS,L=DDMMSS,L=DDMMSS,L=DDMMSS,L=DDMMSS, ...
Example:
02070010
L=391259,L=0770809,L=391220,L=0770749,L=391147,L=0770715,L=391120,L=0770633,
L=391058,L=0770535,L=391042,L=0770520,L=391016,L=0770427,L=390948,L=0770416,
L=390526,L=0765331,L=390500,L=0765149,L=390456,L=0765139,L=390357,L=0765123,
...
L=390744,L=0771007,L=390826,L=0771022,L=390910,L=0771022,L=390950,L=0771003,
L=391107,L=0770922,
There can be as many as four latitude/longitude pairs per line.

The following table provides the DBASE III+ database field structure of the Water Resources Division's "encyclopedia" file that documents the minimum and maximum parameter values found and the park(s) where they occurred. This file is intended for Water Resources Division internal use, but will be available to anyone upon request after Baseline Water Quality Data Inventory and Analysis reports have been completed for all parks.

<b><u>Encyclopedia File: WRD File For Internal Use Only</u></b>				
<b>Field Name</b>	<b>Start</b>	<b>Stop</b>	<b>Length</b>	<b>Field Description</b>
PARM	1	5	5	STORET Parameter Code
PARMNAME	6	45	40	Parameter Name
MINVAL	46	61	16.7	Minimum Value
MINVALPARK	62	65	4	Park Unit with Minimum Value
MAXVAL	66	71	16.7	Maximum Value
MAXVALPARK	72	75	4	Park Unit with Maximum Value

## Appendix C

### STORET Water Quality Control/Edit Checking

The following table provides the high and low values used by STORET since November 1983 for 190 common water quality parameters to screen or error check data. Data entered into STORET prior to November 1983, however, were not subjected to this edit/bounds check. Additionally, data from the USGS WATSTORE system that is loaded into STORET is never subjected to these edit criteria and agencies entering data in STORET can override these edit criteria to enter data values that fall outside a range. As a consequence, all data downloaded from STORET for the purposes of this project were filtered through these edit criteria to document values outside the generally accepted ranges. Decisions were then made on a case-by-case basis to retain or discard obviously incorrect data. Refer to the Water Quality Observations Outside STORET Edit Criteria section of the Interpretive Guide To Water Quality Results chapter for more information on this subject.

STORET Code	STORET Parameter Description	High Value	Low Value
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	37.0	-2.0
00011	TEMPERATURE, WATER (DEGREES FAHRENHEIT)	98.0	31.0
00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	52.0	-40.0
00021	TEMPERATURE, AIR (DEGREES FAHRENHEIT)	125.0	-40.0
00026	TOXICS-IDENTIFY DATA COLLECTION BY EPA DIRECTIVE	1990.9	1977.0
00032	CLOUD COVER (PERCENT)	101.0	0.0
00035	WIND VELOCITY (MILES PER HOUR)	85.0	0.0
00036	WIND DIRECTION IN DEGREES FROM TRUE N (CLOCKWISE)	361.0	0.0
00045	PRECIPITATION, TOTAL (INCHES PER DAY)	15.0	0.0
00070	TURBIDITY, (JACKSON CANDLE UNITS)	1500.0	0.0
00074	TURBIDITY, TRANSMISSOMETER, PERCENT TRANSMISSION	101.0	0.0
00075	TURBIDITY, HELLIGE (PPM AS SILICON DIOXIDE)	500.0	0.0
00076	TURBIDITY,HACH TURBIDIMETER (FORMAZIN TURB UNIT)	1000.0	0.0
00077	TRANSPARENCY, SECCHI DISC (INCHES)	600.0	0.0
00080	COLOR (PLATINUM-COBALT UNITS)	500.0	0.0
00081	COLOR,APPARENT(UNFILTERED SAMPLE) PLAT-COB UNITS	500.0	0.0
00085	ODOR (THRESHOLD NUMBER AT ROOM TEMPERATURE)	250.0	0.0
00094	SPECIFIC CONDUCTANCE,FIELD (UMHOS/CM @ 25C)	60000.0	1.0
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	60000.0	1.0
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE (MG/L)	30.0	0.0

STORET Code	STORET Parameter Description	High Value	Low Value
00300	OXYGEN, DISSOLVED (MG/L)	30.0	0.0
00301	OXYGEN, DISSOLVED, PERCENT OF SATURATION%	200.0	0.0
00310	BOD, 5 DAY, 20 DEG C (MG/L)	150.0	0.0
00335	COD, .025N K2CR2O7 (MG/L)	1000.0	0.0
00340	COD, .25N K2CR2O7 (MG/L)	1000.0	0.0
00365	CHLORINE DEMAND, 15 MINUTE (MG/L)	15.0	0.0
00400	PH (STANDARD UNITS)	12.0	0.9
00403	PH, LAB, STANDARD UNITS, (STANDARD UNITS)	12.0	0.9
00405	CARBON DIOXIDE (MG/L AS CO2)	100.0	0.0
00406	PH, FIELD (STANDARD UNITS)	12.0	0.9
00410	ALKALINITY, TOTAL (MG/L AS CaCO3)	1000.0	0.0
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)	750.0	0.0
00435	ACIDITY, TOTAL (MG/L AS CaCO3)	1000.0	0.0
00436	ACIDITY, MINERAL (METHYL ORANGE) (MG/L AS CaCO3)	1000.0	0.0
00437	ACIDITY, CO2 (PHENOLPHTHALEIN) (MG/L AS CaCO3)	750.0	0.0
00440	BICARBONATE ION (MG/L AS HCO3)	450.0	0.0
00445	CARBONATE ION (MG/L AS CO3)	100.0	0.0
00480	SALINITY - PARTS PER THOUSAND	40.0	0.0
00500	RESIDUE, TOTAL (MG/L)	15000.0	0.0
00505	RESIDUE, TOTAL VOLATILE (MG/L)	10000.0	0.0
00510	RESIDUE, TOTAL FIXED (MG/L)	10000.0	0.0
00515	RESIDUE, TOTAL FILTRABLE (DRIED AT 105C), (MG/L)	20000.0	0.0
00520	RESIDUE, VOLATILE FILTRABLE (MG/L)	10000.0	0.0
00525	RESIDUE, FIXED FILTRABLE (MG/L)	10000.0	0.0
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	10000.0	0.0
00535	RESIDUE, VOLATILE NONFILTRABLE (MG/L)	10000.0	0.0
00540	RESIDUE, FIXED NONFILTRABLE (MG/L)	10000.0	0.0
00545	RESIDUE, SETTLEABLE (ML/L)	1000.0	0.0
00546	RESIDUE, SETTLEABLE (MG/L)	1000.0	0.0



STORET Code	STORET Parameter Description	High Value	Low Value
00550	OIL & GREASE (SOXHLET EXTRACTION) TOTAL,REC., (MG/L)	250.0	0.0
00600	NITROGEN, TOTAL (MG/L AS N)	100.0	0.0
00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	15.0	0.0
00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	25.0	0.0
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	20.0	0.0
00615	NITRITE NITROGEN, TOTAL (MG/L AS N)	5.0	0.0
00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	50.0	0.0
00625	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N)	50.0	0.0
00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	55.0	0.0
00635	NITROGEN, AMMONIA & ORG., TOTAL 1 DET (MG/L AS N)	70.0	0.0
00650	PHOSPHATE, TOTAL (MG/L AS PO4)	30.0	0.0
00653	PHOSPHATE, TOTAL SOLUBLE (MG/L)	30.0	0.0
00655	PHOSPHATE, POLY (MG/L AS PO4)	30.0	0.0
00660	PHOSPHATE, ORTHO (MG/L AS PO4)	30.0	0.0
00665	PHOSPHORUS, TOTAL (MG/L AS P)	10.0	0.0
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	10.0	0.0
00680	CARBON, TOTAL ORGANIC (MG/L AS C)	100.0	0.0
00681	CARBON, DISSOLVED ORGANIC (MG/L AS C)	100.0	0.0
00685	CARBON, TOTAL INORGANIC (MG/L AS C)	100.0	0.0
00690	CARBON, TOTAL (MG/L AS C)	150.0	0.0
00720	CYANIDE, TOTAL (MG/L AS CN)	10.0	0.0
00745	SULFIDE, TOTAL (MG/L AS S)	1500.0	0.0
00746	SULFIDE, DISSOLVED (MG/L AS S)	1500.0	0.0
00760	SULFITE WASTE LIQUOR, PEARL BENSON INDEX (MG/L)	150.0	0.0
00900	HARDNESS, TOTAL (MG/L AS CaCO3)	5000.0	0.0
00910	CALCIUM (MG/L AS CaCO3)	3000.0	0.0
00915	CALCIUM, DISSOLVED (MG/L AS Ca)	1000.0	0.0
00916	CALCIUM, TOTAL (MG/L AS Ca)	1000.0	0.0
00920	MAGNESIUM (MG/L AS CaCO3)	3000.0	0.0

<b>STORET Code</b>	<b>STORET Parameter Description</b>	<b>High Value</b>	<b>Low Value</b>
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)	1000.0	0.0
00927	MAGNESIUM, TOTAL (MG/L AS MG)	1000.0	0.0
00929	SODIUM, TOTAL (MG/L AS NA)	5000.0	0.0
00930	SODIUM, DISSOLVED (MG/L AS NA)	5000.0	0.0
00931	SODIUM ADSORPTION RATIO	50.0	0.0
00935	POTASSIUM, DISSOLVED (MG/L AS K)	175.0	0.0
00937	POTASSIUM, TOTAL MG/L AS K)	175.0	0.0
00940	CHLORIDE, TOTAL IN WATER, (MG/L)	22000.0	0.0
00945	SULFATE, TOTAL (MG/L AS SO4)	2500.0	0.0
00946	SULFATE, DISSOLVED (MG/L AS SO4)	2500.0	0.0
00950	FLUORIDE, DISSOLVED (MG/L AS F)	15.0	0.0
00951	FLUORIDE, TOTAL (MG/L AS F)	15.0	0.0
00955	SILICA, DISSOLVED (MG/L AS SI02)	2000.0	0.0
00956	SILICA, TOTAL (MG/L AS SI02)	2000.0	0.0
01000	ARSENIC, DISSOLVED (UG/L AS AS)	5000.0	0.0
01002	ARSENIC, TOTAL (UG/L AS AS)	5000.0	0.0
01005	BARIUM, DISSOLVED (UG/L AS BA)	2000.0	0.0
01007	BARIUM, TOTAL (UG/L AS BA)	2000.0	0.0
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	2000.0	0.0
01012	BERYLLIUM, TOTAL (UG/L AS BE)	2000.0	0.0
01020	BORON, DISSOLVED (UG/L AS B)	5000.0	0.0
01022	BORON, TOTAL (UG/L AS B)	5000.0	0.0
01025	CADMIUM, DISSOLVED (UG/L AS CD)	500.0	0.0
01027	CADMIUM, TOTAL (UG/L AS CD)	500.0	0.0
01030	CHROMIUM, DISSOLVED (UG/L AS CR)	2000.0	0.0
01032	CHROMIUM, HEXAVALENT (UG/L AS CR)	2000.0	0.0
01033	CHROMIUM, TRI-VAL (UG/L AS CR)	2000.0	0.0
01034	CHROMIUM, TOTAL (UG/L AS CR)	2000.0	0.0
01040	COPPER, DISSOLVED (UG/L AS CU)	2000.0	0.0

STORET Code	STORET Parameter Description	High Value	Low Value
01042	COPPER, TOTAL (UG/L AS CU)	5000.0	0.0
01045	IRON, TOTAL (UG/L AS FE)	56000.0	0.0
01046	IRON, DISSOLVED (UG/L AS FE)	56000.0	0.0
01047	IRON, FERROUS (UG/L AS FE)	56000.0	0.0
01049	LEAD, DISSOLVED (UG/L AS PB)	1000.0	0.0
01051	LEAD, TOTAL (UG/L AS PB)	1000.0	0.0
01055	MANGANESE, TOTAL (UG/L AS MN)	5000.0	0.0
01056	MANGANESE, DISSOLVED (UG/L AS MN)	5000.0	0.0
01065	NICKEL, DISSOLVED (UG/L AS NI)	2000.0	0.0
01067	NICKEL, TOTAL (UG/L AS NI)	2000.0	0.0
01075	SILVER, DISSOLVED (UG/L AS AG)	5000.0	0.0
01077	SILVER, TOTAL (UG/L AS AG)	5000.0	0.0
01090	ZINC, DISSOLVED (UG/L AS ZN)	25000.0	0.0
01092	ZINC, TOTAL (UG/L AS ZN)	25000.0	0.0
01105	ALUMINUM, TOTAL (UG/L AS AL)	20000.0	0.0
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	20000.0	0.0
01145	SELENIUM, DISSOLVED (UG/L AS SE)	100.0	0.0
01501	ALPHA, TOTAL	200.0	0.0
01503	ALPHA, DISSOLVED	75.0	0.0
01505	ALPHA, SUSPENDED	150.0	0.0
03501	BETA, TOTAL	3500.0	0.0
03503	BETA, DISSOLVED	3000.0	0.0
03505	BETA, SUSPENDED	1500.0	0.0
09503	RADIUM 226, DISSOLVED	500.0	0.0
13501	STRONTIUM 90, TOTAL	500.0	0.0
22703	URANIUM, NATURAL, DISSOLVED	500.0	0.0
31501	COLIFORM, TOT, MEMBRANE FILTER, IMMED. M-ENDO MED, 35C	24000000.0	0.0
31502	COLIFORM, TOTAL, 10/ML	24000000.0	0.0
31503	COLIFORM, TOT, MEMBR FILTER, DELAYED, M-ENDO MED, 35C	24000000.0	0.0

STORET Code	STORET Parameter Description	High Value	Low Value
31504	COLIFORM, TOT, MEMBR FILTER, IMMED, LES ENDO AGAR, 35C	24000000.0	0.0
31613	FECAL COLIFORM, MEMBR FILTER, M-FC AGAR, 44.5C, 24HR	10000000.0	0.0
31615	FECAL COLIFORM, MPN, EC MED, 44.5C (TUBE 31614)	10000000.0	0.0
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5C	10000000.0	0.0
31672	FECAL STREPTOCOCCI, PLATE COUNT M-ENTER AGAR, 35C, 48HR	500000.0	0.0
31673	FECAL STREPTOCOCCI, MBR FILT, KF AGAR, 35C, 48HR	500000.0	0.0
31677	FECAL STREPTOCOCCI, MPN, AD-EVA, 35C (TUBE 31678)	500000.0	0.0
31679	FECAL STREPTOCOCCI, MF M-ENTEROCOCCUS AGAR, 35C, 48H	500000.0	0.0
31749	PLATE COUNT, TOTAL, TPC AGAR, 20C, 48 HRS	99999999.0	0.0
31751	PLATE COUNT, TOTAL, TPC AGAR, 35C, 24 HRS	99999999.0	0.0
32210	CHLOROPHYLL-A UG/L TRICHROMATIC UNCORRECTED	500.0	0.0
32211	CHLOROPHYLL-A UG/L SPECTROPHOTOMETRIC ACID. METH.	750.0	0.0
32212	CHLOROPHYLL-B UG/L TRICHROMATIC UNCORRECTED	1000.0	0.0
32214	CHLOROPHYLL-C UG/L TRICHROMATIC UNCORRECTED	200.0	0.0
32217	CHLOROPHYLL A UG/L FLUOROMETRIC UNCORRECTED	500.0	0.0
32218	PHEOPHYTIN-A UG/L SPECTROPHOTOMETRIC ACID. METH.	200.0	0.0
32219	PHEOPHYTIN RATIO(OD 663)SPECTRO,BEFORE/AFTER ACID	2.0	0.0
32221	CHLOROPHYLL A,% OF(PHEOPHYTIN A+CHL A),SPEC-ACID.	101.0	0.0
32230	CHLOROPHYLL A (MG/L)	0.5	0.0
32231	CHLOROPHYLL B (MG/L)	0.8	0.0
32232	CHLOROPHYLL C (MG/L)	0.2	0.0
32234	CHLOROPHYLL, TOTAL (A+B+C) (MG/L)	1.0	0.0
32270	CHLOROFORM EXTRACTABLES TOTAL IN MG PER LITER	5.0	0.0
32730	PHENOLICS, TOTAL, RECOVERABLE (UG/L)	1500.0	0.0
38260	METHYLENE BLUE ACTIVE SUBST. (DETERGENTS, ETC.)	10.0	0.0
39330	ALDRIN IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39340	GAMMA-BHC(LINDANE), WHOLE WATER, (UG/L)	20.0	0.0
39350	CHLORDANE(TECH MIX & METABS), WHOLE WATER, (UG/L)	20.0	0.0
39360	DDD IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0

STORET Code	STORET Parameter Description	High Value	Low Value
39365	DDE IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39370	DDT IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39380	DIELDRIN IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39390	ENDRIN IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39400	TOXAPHENE IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39410	HEPTACHLOR IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39420	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39480	METHOXYCHLOR IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39516	PCBS IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39530	MALATHION IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39540	PARATHION IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39600	METHYL PARATHION IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
39782	LINDANE IN WHOLE WATER SAMPLE (UG/L)	20.0	0.0
50060	CHLORINE, TOTAL RESIDUAL (MG/L)	5.0	0.0
60050	ALGAE, TOTAL (CELLS/ML)	700000.0	0.0
70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C), (MG/L)	4000.0	0.0
70505	PHOSPHATE, TOTAL,COLORIMETRIC METHOD (MG/L AS P)	10.0	0.0
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	10.0	0.0
71850	NITRATE NITROGEN, TOTAL (MG/L AS NO3)	65.0	0.0
71886	PHOSPHORUS, TOTAL, AS PO4 - (MG/L)	30.0	0.0
71890	MERCURY, DISSOLVED (UG/L AS HG)	10.0	0.0
71895	MERCURY, SUSPENDED (UG/L AS HG)	10.0	0.0
71900	MERCURY, TOTAL (UG/L AS HG)	10.0	0.0
74010	IRON, TOTAL (MG/L AS FE)	56000.0	0.0



## Appendix D

### STORET Administrative Parameters

<b>STORET Code</b>	<b>Description of STORET Administrative Parameters</b>
00022	LENGTH OF EXPOSURE OF SAMPLE OR TEST - DAYS
00026	TOXICS-IDENTIFY DATA COLLECTION BY EPA DIRECTIVE
00027	CODE NO FOR AGENCY COLLECTING SAMPLE
00028	CODE NO FOR AGENCY ANALYZING SAMPLE
00029	NUMBER USED IN SAMPLE ACCOUNTING PROCEDURE
00063	SAMPLING POINTS, NUMBER OF IN A CROSS SECTION
00073	SAMPLE LOC CODE DEFINED BY THERMAL STRUCT & DEPTH
00111	RATIO OF FECAL COLIFORM TO FECAL STREPTOCOCCI
00115	SAMPLE TREATMENT CODE (1=RAW,2=TREATED)
00116	INTENSIVE SURVEY IDENTIFICATION NUMBER
00145	TOTAL PRODUCTION OF PRODUCT MANUFACTURED TONS/DAY
01273	TOTAL ACID PRIORITY POLLUTANTS MG/L
01274	TOTAL BASE-NEUTRAL PRIORITY POLLUTANTS MG/L
01275	TOTAL VOLATILE PRIORITY POLLUTANTS MG/L
01365	ANALYSIS DATE (DIOXIN) (YYMMDD)
04177	SAMPLE STABILIZATION, RECOVERY TEST CODE
04178	FIELD PROTOCOL(CONFDNCE ASSIGNED FIELD SAMPLE) CODE
04179	SAMPLE STATION LOCKED CODE
04180	CONDITION OF STATION SITE CODE
04181	LABORATORY QA/QC PLAN CONFIDENCE CODE
04182	SAMPLE TYPE CODE
04183	SAMPLE REMARKS CODE
30333	BAG MESH SIZE, BEDLOAD SAMPLER, MM
34772	NPDES NUMBER, CROSS REFERENCE CODE
34785	GAGE TYPE, METHOD CODE

<b>STORET Code</b>	<b>Description of STORET Administrative Parameters</b>
45575	GC MAKE AND MODEL INFORMATION CODE
45576	GC DETECTOR TYPE CODE
45577	GC COLUMN TYPE CODE
45580	METHOD OF ANALYSIS CODE
45581	LABORATORY LOCATION CODE
46107	SAMPLE LOCATION CODE (TREATMENT PLANT OPERATION)
46390	TOXICITY CHARACTERISTIC LEACHING PROCEDURE P OR F
46396	PROCESS TO SIGNIFICANTLY REDUCE PATHOGENS YES OR NO
46397	PROCESS TO FURTHER REDUCE PATHOGENS YES OR NO
47001	PERMIT EXPIRATION DATE (JULIAN CALENDAR)
47044	OBSERVATIONS,WASTE SITE-SEVERITY OF PROBLEMS CODE
47460	SUBSAMPLE - DECIMAL FRACTION OF WHOLE NUMBER
47477	COMPOSITION AND/OR DISPOSITION OF CATCH NUM CODE
70231	CURRENT DIRECTION (DEGREES FROM DOWNSTREAM FLOW)
71999	SAMPLE PURPOSE CODE
72032	NUMBER OF SPILLWAY GATES OPEN
73672	DATE OF ANALYSIS YYMMDD
73673	DATE OF EXTRACTION YYMMDD
74031	GRANT, PROJECT COST ELIGIBLE FOR CONSTRUCTION
74032	GRANT, AMOUNT OF PL 660 GRANT FOR THIS PROJECT
74033	GRANT, FEDERAL, OTHER THAN PL 660 GRANT
74034	GRANT, FUTURE PL 660 WHICH MAY APPLY TO THIS PROJ
74035	GRANT, TOTAL FEDERAL, WHICH APPLIES TO THIS PROJ
74036	GRANT, PROJ NUMBER ASSIGNED TO THIS APPLICATION
74037	GRANT, TYPE OF PROJECT TO WHICH GRANT APPLIES
74038	GRANT, STATUS OF PROJECT TO WHICH GRANT APPLIES
74039	PCS/STORET WATER QUALITY FILE INTERFACE YR/MO/DAY
74040	SURVEY NUMBER YYMMNO
74041	STORET STORAGE TRANSACTION DATE YR/MO/DAY



<b>STORET Code</b>	<b>Description of STORET Administrative Parameters</b>
74050	RADIOACTIVITY, GENERAL (PERMIT)
74051	ALGICIDES, GENERAL (PERMIT)
74052	CHLORINATED HYDROCARBONS, GENERAL (PERMIT)
74053	PESTICIDES, GENERAL (PERMIT)
74056	COLIFORM, TOTAL, GENERAL (PERMIT)
74065	STREAM FLOW CLASS
74066	ANNUAL RUNOFF
74067	SOIL CLASSIFICATION
74068	WATER QUALITY DESIGNATED USE CLASSIFICATION (IA)
74100	PRIMARY 1972 SIC CODE
74101	SECONDARY 1972 SIC CODE
74102	SECONDARY 1972 SIC CODE
74103	SECONDARY 1972 SIC CODE
74200	SAMPLE PRESERVATION METHODS ONE OR MORE IN COMB.
74205	LAND RESOURCE AREA (IOWA)
74206	SOIL EROSION POTENTIAL (IOWA)
74209	WATER QUALITY INDEX - STATE OF ILLINOIS, EPA
74210	FOREST STREAM WATER QUALITY INDEX CALC. NUMBER
74990	FISH SPECIES NUMERIC CODE - F&W SERVICE
74995	ANATOMY CODE
75000	SPECIES CODE-REMARK=SEX (M=MALE,F=FEMALE,U=UNK.)
81028	WITHDRAWAL OF GROUNDWATER (MILLION GAL/DAY)
82258	WATER CLASSIFICATION CODE (1-9) CODE
82292	DATA RELAY GROUND STATION SOURCE NODE CODE, CODE
82309	CONTAMINATION SOURCE POSSIBLE CODES NUMERIC CODE
82310	DEPTH CONFIDENCE IN REPORTED VALUES NUMERIC CODES
82373	FREQUENCY OF SAMPLING M=MON,Q=QUAR,Y=YR,R=RNFFCODE
82519	DRILLER REGISTRATION NUMBER ALPHA-NUMERIC CODE
82562	NARRATIVE REQUIREMENT EXCEEDANCES INTEGER

<b>STORET Code</b>	<b>Description of STORET Administrative Parameters</b>
82576	DAILY EXCURSION TIME, WATER MIN
82577	MONTHLY EXCURSION TIME, WATER TOTAL MIN
82578	DAY/MAXIMUM EXCURSION TIME, WATER MIN
82579	CODE NUMBER FOR PERSON COLLECTING SAMPLE
84002	CODE, GENERAL INFORMATION - ALPHA, NUMERIC CODE
84003	WATER SHED ID NUMBER (IOWA)
84005	FISH SPECIES CODE-FISH & WILDLIFE SER
84006	OWNERSHIP CLASSIFICATION OF LAKE, ILLINOIS SYSTEM
84010	PUBLIC ACCESS TO LAKE ILLINOIS SYSTEM
84011	CONFIDENCE CODE FOR GLC CONFIRMATION CODE
84012	PATIENT PARAMETERS (AGE, SEX, WT, ETC.) CODE
84013	SAMPLE PARAMETERS D=DESIGN SPECIMEN, S=SURPLUS
84027	CODE NUMBER FOR AGENCY COLLECTING SAMPLE
84028	CODE NO FOR AGENCY ANALYZING SAMPLE
84029	NUMBER USED IN SAMPLE ACCOUNTING PROCEDURE FIELD
84033	EGD ANALYTICAL DATA COMPLETENESS Y=YES N=NO CODE
84034	EGD SMPL NO.(SMPL.IDENT) NUMERIC=SCS ALPH+4NUM=JRB
84035	EGD SAMPLE CLASSIFICATION CATEGORY ALPHA CODE
84036	EGD INDUSTRIAL CATEGORY NUMERIC CODE
84037	EGD INDUSTRIAL CATEGORY NAME ALPHA CODE
84038	EGD LABORATORY NUMERIC CODE
84039	EGD LABORATORY NAME ALPHA CODE
84040	EGD SAMPLE STATUS (1-5,9,AND BLANK) NUMERIC CODE
84041	EGD ACID STATUS (1-5,9,AND BLANK) NUMERIC CODE
84042	EGD BASE STATUS (1-5,9AND BLANK) NUMERIC CODE
84043	EGD PESTICIDE STATUS (1-5,9,AND BLANK) NUMERIC CODE
84044	EGD VOA FRACT. STATUS INDICATOR (1-5,9,BLANK) CODE
84045	EGD ACID EXTRACT DATE (YYMMDD) NUMERIC CODE
84046	EGD BASE EXTRACTION DATE (YYMMDD) NUMERIC CODE

<b>STORET Code</b>	<b>Description of STORET Administrative Parameters</b>
84047	EGD PESTICIDE EXTRACTION DATE (YYMMDD) NUMERIC CODE
84048	EGD VOA FRACTION INJECTION DATE YYMMDD NUMERIC CODE
84049	EGD ACID CONC. FACTOR (FIVE NUMERIC DIGITS) CODE
84050	EGD BASE CONC.FACTOR (FIVE NUMERIC DIGITS) CODE
84051	EGD PESTICIDE CONC.FACTOR (FIVE NUMERIC DIGITS) CODE
84052	EGD VOA FRACTION CONC. FACTOR (5 NUMERIC DIGITS) CODE
84053	SAMPLE TYPE AND FREQUENCY OF COLLECTION CODE
84054	LITHOLOGY ALPHA-NUMERIC CODE
84055	AVAILABLE LOGS ALPHA-NUMERIC CODE
84056	WATER USE CATEGORY ALPHA-NUMERIC CODE
84057	INSPECTION TYPE ALPHA-NUMERIC CODE
84058	HYDROGEOLOGIC SYSTEM ALPHA-NUMERIC CODE
84059	WELL OWNERSHIP ALPHA-NUMERIC CODE
84060	TOPOGRAPHY ALPHA-NUMERIC CODE
84061	WELL USE ALPHA-NUMERIC CODE
84062	MEASURING POINT DESCRIPTION ALPHA-NUMERIC CODE
84063	DRILLING METHOD ALPHA-NUMERIC CODE
84064	WELL DATA AVAILABILITY ALPHA-NUMERIC CODE
84065	PERMIT COMPLIANCE DATA ALPHA-NUMERIC CODE
84067	NATURE OF MONITORING ALPHA-NUMERIC CODE
84073	REPLACES EXISTING WELL ALPHA-NUMERIC CODE
84074	AQUIFER TYPE (SEE USGS HANDBOOK) ALPHA CODE
84075	WELL PERMIT NUMBER ALPHA-NUMERIC CODE
84076	TSD MONITORING WELL TYPE ALPHA CODE
84077	TSD MONITORING WELL SAMPLING METHOD ALPHA CODE
84083	POLLUTION VERIFICATION ALPHA CODE
84084	WELL SAMPLE PURPOSE ALPHA CODE
84090	SAMPLE FILE CONTROL PROJECT IDENTIFICATION A-CODE
84091	INFILTRATION DATE/BEGINNING 'YYMMDD'

<b>STORET Code</b>	<b>Description of STORET Administrative Parameters</b>
84092	INFILTRATION DATE/ENDING 'YYMMDD'
84093	ENFORCEMENT FORM #2-C, DATA IDENTIFICATION CODE
84102	SAMPLE SPECIES-SUB ID ALPHA CODE
84103	DIOXIN LABORATORY ALPHA CODE
84104	DIOXIN STUDY ALPHA CODE
84112	SOURCE OF GEOHYDROLOGIC DATA CODE
84119	SOURCE OF EVACUATION DATA CODE
84121	REGULATING AGENCY CODE
84122	SAMPLE PURPOSE CODE
84126	SOURCE OF DEPTH DATA CODE
84127	METHOD OF DEPTH MEASUREMENT CODE
84128	SOURCE OF WATER-LEVEL DATA CODE
84129	DATA QUALITY
84141	LAKE, PHYSICAL CONDITION AT SAMPLE TIME, 1-5, CODE
84142	LAKE, RECREATIONAL SUITABILITY @ SMPL TIME, 1-5, CODE
84164	SAMPLER TYPE, CODE
85300	PROBLEM CODE NES SURVEY
85327	WATER LEVEL AT SAMPLE COLLECTION TIME-CODE-NES
85332	CLOUD COVER AT SAMPLE COLLECTION TIME-CODE-NES
85553	WELL COMPLETION DATE (MONTH/YEAR)
85554	WELL WORKOVER DATE, LATEST (MONTH/YEAR)

## Appendix E

### STORET Parameters Not Suitable for Statistical Analysis

STORET Code	Description of STORET Parameters Not Suitable for Statistical Analysis
00001	X-SEC. LOC., HORIZ (FT. FROM R BANK LOOK UPSTR.)
00002	X-SEC. LOC., HORIZ (% FROM R BANK LOOK UPSTR.)
00003	SAMPLING STATION LOCATION, VERTICAL (FEET)
00005	X-SEC. LOC., VERTICAL (PERCENT OF TOTAL DEPTH)
00006	DISTANCE FROM LOCATION IN X MILES
00007	DISTANCE FROM LOCATION IN Y MILES
00008	NUMBER USED IN SAMPLE ACCOUNTING PROCEDURE
00009	X-SEC. LOC.(FT FROM LEFT BANK LOOKING DOWNSTRM)
00027	CODE NO FOR AGENCY COLLECTING SAMPLE
00028	CODE NO FOR AGENCY ANALYZING SAMPLE
00033	WEATHER CODE FOR OCEAN-OBSERV. (WMO CODE 4677)
00037	WIND FORCE (BEAUFORT UNITS)
00038	WIND DIRECTION (WMO CODES 0885 + 0887)
00041	WEATHER (WMO CODE 4501)
00042	ALTITUDE IN FEET ABOVE MEAN SEA LEVEL
00043	CLOUD TYPE (WMO CODE 0500)
00044	CLOUD AMOUNT (WMO CODE 2700)
00047	TOTAL PARTIAL PRESSURE DISSOLVED GASES (MM HG)
00048	TOTAL PARTIAL PRESSURE DISSOLVED GASES (% SAT)
00049	SURFACE AREA IN SQUARE MILES
00050	EVAPORATION, TOTAL (INCHES PER DAY)
00051	SURFACE AREA IN SQUARE FEET
00053	SURFACE AREA, ACRES
00054	RESERVOIR STORAGE - ACRE FEET
00063	SAMPLING POINTS, NUMBER OF IN A CROSS SECTION
00067	TIDE STAGE

<b>STORET Code</b>	<b>Description of STORET Parameters Not Suitable for Statistical Analysis</b>
00069	SEA WAVES(0=NONE;1=0-3";2=4-20";3=21-48";4=4-8')
00097	SAMPLING STATION LOCATION, VERTICAL (FEET)
00098	SAMPLING STATION LOCATION, VERTICAL (METERS)
00111	RATIO OF FECAL COLIFORM TO FECAL STREPTOCOCCI
00115	SAMPLE TREATMENT CODE (1=RAW,2=TREATED)
01300	OIL-GREASE (SEVERITY)
01305	DETERGENT SUDS (SEVERITY)
01310	GAS BUBBLES (SEVERITY)
01315	SLUDGE, FLOATING (SEVERITY)
01320	GARBAGE, FLOATING (SEVERITY)
01325	ALGAE, FLOATING MATS (SEVERITY)
01330	ODOR, ATMOSPHERIC (SEVERITY)
01331	TASTE (SEVERITY)
01335	SEWAGE SOLIDS, FRESH, FLOATING (SEVERITY)
01340	FISH, DEAD (SEVERITY)
01345	DEBRIS, FLOATING (SEVERITY)
01350	TURBIDITY (SEVERITY)
01351	FLOW, STRM,1DRY,2LOW,3NORM,4FLOOD,5ABOVE NORM,CODE
01355	ICE COVER, FLOATING OR SOLID (SEVERITY)
03595	BIOASSAY (96 HR), EFFLUENT, TOTAL CODE
03596	BIOASSAY (48 HR), EFFLUENT, TOTAL CODE
03597	BIOASSAY (24 HR), EFFLUENT, TOTAL CODE
03598	TOXICITY, EFFLUENT, TOTAL CODE
03599	TOXICITY, CHOICE OF SPECIES, EFFLUENT CODE
03600	TOXICITY, TROUT, EFFLUENT, TOTAL CODE
03601	TOXICITY, SAND DOLLAR, EFFLUENT CODE
03602	BIOCHEMICAL OXYGEN DEMAND, EFFLUENT, TOTAL CODE
03603	SOLIDS, TOTAL SUSPENDABLE, EFFLUENT, TOTAL CODE
03605	FLOW METER CALIBRATION, WATER CODE

<b>STORET Code</b>	<b>Description of STORET Parameters Not Suitable for Statistical Analysis</b>
03717	ONCORHYNCHUS MYKISS, WATER CODE
04117	TETHER LINE USED FOR COLLECTING SAMPLE CODE
04160	HALOCARBONS, PURGEABLE, SCAN, EFFLUENT CODE
04161	HALOCARBONS, PURGEABLE, SCAN, SLUDGE CODE
04162	AROMATIC, PURGEABLE, SCAN, EFFLUENT CODE
04163	AROMATIC, PURGEABLE, SCAN, SLUDGE CODE
04164	PHENOLIC, TOTAL, SCAN, EFFLUENT CODE
04165	PHENOLIC, TOTAL, SCAN, SLUDGE CODE
04166	PCB, TOTAL, SCAN, EFFLUENT CODE
04167	PCB, TOTAL, SCAN, SLUDGE CODE
04174	FREE LIQUIDS IN SEWAGE SLUDGE CODE
34765	AVIAN NUMERICAL SPECIES CODE (BIRDS)
34766	MAMMALIAN NUMERICAL SPECIES CODE
34771	MACROPHYTE, INSTREAM, VISUAL SIGHTING CODE
34773	ODOR, AMBIENT WATER CODE
34774	FISH, INSTREAM, VISUAL SIGHTING CODE
34775	STREAMBANK CHANNEL ALTERATIONS CODE
34776	HYDRAULIC STRUCTURES, INSTREAM CODE
34780	LAND USE, ADJACENT STREAM CODE
34781	SAMPLE POINTS, # OF LONGTDNL TRANSECTS, REACH CODE
34782	STREAM STAGE TREND CODE
34789	HABITATS, TYPES SAMPLED CODE
45613	FLOATING SOLIDS/VISIBLE FOAM, VISUAL, YES=1, NO=0, CODE
45614	SANITARY WASTE DISCHARGE ASSESSMENT, YES=1, NO=0, CODE
45615	INTERMITTENT DISCHARGE ASSESSMENT, YES=1, NO=0, CODE
46001	WATER APPEARANCE CODE (BASED ON FIELD ASSESSMENT)
46478	EQUIPMENT INSPECTION, VISUAL CODE
46486	TOXICITY, ACUTE 24HR (STATIC) CERIODAPHNIA (P/F) CODE
47454	FLOW METER REVOLUTIONS NUMBER

<b>STORET Code</b>	<b>Description of STORET Parameters Not Suitable for Statistical Analysis</b>
47455	LATITUDE, STARTING, OF A SAMPLE TOW DDMMS
47456	LONGITUDE, STARTING, OF A SAMPLE TOW DDDMMSS
47457	LATITUDE, FINISHING, OF A SAMPLE TOW DDMMS
47458	LONGITUDE, FINISHING, OF A SAMPLE TOW DDDMMSS
47459	LENGTH FREQUENCY NUMBER
47461	TIME THAT THE EQUIPMENT WAS SAMPLING MINUTES
47476	DIRECTION OF TOW IN RELATION TO CURRENT NUM CODE
50044	HYDROGRAPH LIMB, 1BASE, 2RISING, 3PEAK, 4FALLING, CODE
61390	DIATOMS,FIRST DOMINANT SPECIES OF UNITS - CODE
61391	DIATOMS,SECOND DOMINANT SPECIES OF UNITS - CODE
61392	DIATOMS,THIRD DOMINANT SPECIES OF UNITS - CODE
61393	DIATOMS,FOURTH DOMINANT SPECIES OF UNITS - CODE
70220	WAVE DIRECTION (WMO CODES 0885 + 0887)
70222	WAVE HEIGHT (WMO CODE 1555)
70223	WAVE PERIOD (WMO CODE 3155)
71090	BIVALVE SPECIES CODE
71500	EQUITABILITY INDEX,BENTHIC MACROINVER CODE
72000	ELEVATION OF LAND SURFACE DATUM (FT. ABOVE MSL)
72001	DEPTH, TOTAL OF HOLE (FT BELOW LAND SURFACE DATUM)
72002	DEPTH TO TOP OF WATER-BEARING ZONE SAMPLED (FT)
72003	DEPTH TO BOTTOM OF WATER-BEARING ZONE SAMPLED (FT)
72004	PUMP OR FLOW PERIOD PRIOR TO SAMPLING MINUTES
72005	SAMPLE SOURCE CODE (BM WELL DATA)
72006	SAMPLING CONDITION CODE (BM WELL DATA)
72007	FORMATION NAME CODE (BM WELL DATA)
72017	SERIES CODE (BM WELL DATA)
72018	SYSTEM CODE (BM WELL DATA)
72111	DIRECT READOUT GROUND STATN TRANSMIT ERROR CODE NUM
74054	FECAL STREPTOCOCCI, GENERAL (PERMIT)



<b>STORET Code</b>	<b>Description of STORET Parameters Not Suitable for Statistical Analysis</b>
74055	FECAL COLIFORM, GENERAL (PERMIT)
80889	ACTIVATED SLUDGE PROCESS MODIFICATION CODE
81024	DRAINAGE AREA IN SQUARE MILES (SQ. MI.)
81637	SHELLFISH SPECIES NUMERIC CODE
82289	LAGOON OBSERVATION, VISUAL, Y=YES N=NO CODE
82398	SAMPLING METHOD (CODES)
82524	STORAGE COEFFICIENT NUMERICAL CODE
82923	ATMOSPHERIC DEPOSITION TYPE, WET CODE
83205	ATMOSPHERIC DEPOSITION TYPE, BULK CODE
84000	GEOLOGIC AGE CODE (SEE USGS CATALOG)
84001	AQUIFER NAME CODE (SEE USGS CATALOG)
84004	LAKE TYPE ILLINOIS CLASSIFICATION SYSTEM
84007	ANATOMY ALPHA CODE
84008	LIFE STYLE/HABITAT OF THE INDIVIDUALS IN THE SAMPLE
84009	SHELLFISH SPECIES ALPHANUMERIC CODE
84014	SPECIES SEX CODE
84030	CLOUD AMOUNT ALPHA WEATHER CODES
84031	PHYSICAL WEATHER ALPHA WEATHER CODES
84032	STREAM CONDITION ALPHA WEATHER CODES
84066	OIL AND GREASE, VISUAL, ALPHA-NUMERIC CODE
84068	SERIES CODE ALPHA-NUMERIC CODE
84069	FORMATION CODE ALPHA-NUMERIC CODE
84070	METHOD OF TESTING WELL YIELD ALPHA-NUMERIC CODE
84071	WATER LEVEL MEASUREMENT CONDITIONS ALPHA-NUM CODE
84072	WATER LEVEL MEASUREMENT METHOD ALPHA-NUMERIC CODE
84078	GIARDIA LAMBLIA, 2HSO4 OR SUC GRAD, MICRO, CODE
84079	BACTERIA, CELLUOLYTIC, AEROBIC-ANAEROBIC, RT 5-7, CODE
84080	BACTERIA, HYDROCARBONOCLASTIC, SHAKE INC 32C/WK, CODE
84081	YERSINIA ENTEROCOLITICA, SB BROTH, MAC AGAR,22C, CODE

<b>STORET Code</b>	<b>Description of STORET Parameters Not Suitable for Statistical Analysis</b>
84082	SALMONELLA/SHIGELLA, QUANT OR QUAL, HVF OR SWAB, CODE
84085	ORGANICS, VOLATILE, DETECTED, NUMERIC CODE, CODE
84086	MACROINVERTEBRATE SPECIES NUMERIC CODE
84087	MACROINVERTEBRATE HABITAT CODE
84088	BIOLOGY 1 MACROINVERTEBRATE CODE
84089	BIOLOGY 2 MACROINVERTEBRATE CODE
84094	PHYTOPLANKTON SPECIES CODE, NUMERIC
84095	PHYTOPLANKTON SPECIES CODE, ALPHA
84096	SEVERITY OF NON-PLANKTON ALGAE-MAT COVERAGE CODE
84097	LAGOON MOUTH CONDITION CODE
84098	COLOR OF NON-PLANKTONIC ALGAE CODE
84099	WATER - RELATIVE WATER LEVEL CODE
84100	SEX(1-MALE,2-FEMALE,3-MIXED,4-UNKNOWN) NUM CODE
84101	METAFORM, BENTHIC, ADULT(A), PUPAE(P), LARVAE(L) CODE
84105	OIL-SEPARATOR OBSERVATION ASSESS (0=DID NOT,1=DID)
84106	EVAPORAT/BED OBS ASSESS (0=DID NOT LOOK, 1=DID LOOK)
84107	AREA INSPECTION, VISUAL (0=DID NOT, 1=DID) CODE
84108	DRAIN FIELD INSPECTION ASSESS (0=DID NOT, 1=DID) CODE
84109	SLUDGE BUILD-UP IN WATER (0=DID NOT OBS, 1=OBS) CODE
84110	POND OBSERVATION ASSESS WATER (0=DID NOT, 1=DID) CODE
84111	LITHOLOGIC MODIFIER CODE
84113	WELL INTAKE FINISH CODE
84114	WELL CASING MATERIAL CODE
84115	TYPE OF MATERIAL FROM WHICH OPENING IS MADE CODE
84116	DRILLING FLUID CODE
84117	TYPE OF SURFACE SEAL CODE
84118	METHOD OF DEVELOPMENT CODE
84120	PACKING MATERIAL CODE
84124	METHOD OF EVACUTAION CODE

<b>STORET Code</b>	<b>Description of STORET Parameters Not Suitable for Statistical Analysis</b>
84125	METHOD OF WATER-LEVEL MEASUREMENT CODE
84130	OUTFALL OBSERVATION, VISUAL, Y=YES N=NO CODE
84131	SAMPLING METHOD, CONFIDENCE CODE (A,B,C,D) CODE
84132	STREAMBANK, VEGETATIVE STABILITY RATING CODE
84133	STREAMBANK, STABILITY (BANK EROSION) RATING CODE
84134	PARTICLES, DEGREE SURROUNDED BY FINE SEDIMENT, CODE
84135	STREAMSIDE, (SHORELINE) COVER RATING CODE
84136	CANOPY TYPE CODE
84137	CHANNEL STABILITY RATING CODE (E,G,F,P) CODE
84138	COLIFORM, TOTAL, WATER, WHOLE, MPN, PRES=1, ABSNT=2, CODE
84139	ENTEROBACTER AGGLOMERANS, WTR, MF, PRES=1, ABSNT=2, CODE
84140	KLEBSIELLA PNEUMONIAE, WTR, WH, MF, PRES=1, ABSNT=2, CODE
84143	WELL, PURGING CONDITION CODE
84144	WELL, SELECTION CRITERIA CODE
84145	PROJECT COMPONENT CODE
84146	LAND USE, PREDOMINANT, WITHIN 100 FT OF WELL, CODE
84147	LAND USE, PREDOMINANT, 1/4 MI.RADIUS OF WELL, CODE
84148	LAND USE, PREDMNT., FRAC., WITHIN 1/4 MI OF WELL, CODE
84149	LAND USE, CHANGE, LAST 10 YRS, WITHIN 1/4MI WELL, CODE
84150	HABITAT QUALITY INDEX RATING CODE
84151	AQUATIC LIFE, USE CLASSES CODE
84152	STREAM, STAGE CLASS CODE
84153	STREAMBANKS, GRAZING DAMAGE CODE
84154	CHANNEL, MAJOR ALTERATIONS CODE
84155	RIFFLE/RUNS, OCCURRENCE CODE
84156	POOL, DESCRIPTION CODE
84157	SANDBARS, LARGE, OCCURRENCE CODE
84158	LAND USE, NEAR STREAM, PREDOMINANT CODE
84159	STREAM,COVER (INSTREAM SHELTER FOR ADULT FISH), CODE

<b>STORET Code</b>	<b>Description of STORET Parameters Not Suitable for Statistical Analysis</b>
84160	STREAM, DEGRADATION RATING CODE
84161	STREAM, ORDER CODE
84162	LAND RESOURCE AREA CODE
84163	FLOW, STREAM, CLASSIFICATION CODE
84165	DISCHARGE EVENT OBSERVATION, YES=1 NO=0, CODE
84166	STORM HYDROGRAPH, DIRECTION, (RISE,FALL), CODE
84167	MICROSCOPIC EXAMINATION CODE
84168	AVIAN SPECIES ALPHA CODE (BIRDS)
84169	MAMMALIAN ALPHA SPECIES CODE
84170	ALPHA AGE TEXT CODE
84200	LATITUDE/LONGITUDE COORDINATES OF WELL, METHOD CODE
84201	NATIONAL REFERENCE DATUM, ALTITUDE(VERTICAL) CODE
84202	ALTITUDE METHOD CODE
85000	STREAM MILE, ACTUAL MILES
85014	HABITAT, 1970 ACRES THIS TYPE FOR THIS STATION
85015	HAB., ESTIMATED ACRES THIS TYPE THIS STATION
85016	HAB., ESTIMATED ACRES THIS TYPE THIS STA. BY 1990
85017	HAB., ESTIMATED ACRES THIS TYPE THIS STA. BY 2000
85018	TYPE CODES: 1=CLEAR CUT/2=SELECT CUT/3=RNGE DEVL P
85019	ACRES, NO. ALTERED FROM 1965-1970 (0-5 YEARS OLD)
85020	ACRES, NO. ALTERED 1960-1965 (5-10 YEARS OLD)
85021	ACRES, NO. ALTERED 1955-1960 (10-15 YEARS OLD)
85022	ACRES, NO. ALTERED 1950-1955 (15-20 YEARS OLD)
85023	ACRES, NO. ALTERED BEFORE 1950 (20+ YEARS OLD)
85024	ACRES,PREDICTED YRLY.AVE.TO BE ALTERED IN FUTURE
85025	LANDOWNERS, CODES FOR ALL IN STATE OF OREGON
85026	ACRES, CURRENT OWNED THIS LANDOWNER THIS STATION
85027	ACRES, ESTIMATED OWNED BY L-O THIS STA. BY 1980
85028	ACRES, ESTIMATED OWNED BY L-O THIS STA. BY 1990

<b>STORET Code</b>	<b>Description of STORET Parameters Not Suitable for Statistical Analysis</b>
85029	ACRES, ESTIMATED OWNED BY L-O THIS STA. BY 2000
85030	LAND USES, CODES FOR ALL IN STATE OF OREGON
85031	ACRES, CURRENT DEDICATED TO THIS USE THIS STATION
85032	ACRES, ESTM. DEDICTD TO THIS USE THIS STA BY 1980
85033	ACRES, ESTM. DEDICTD TO THIS USE THIS STA BY 1990
85034	ACRES, ESTM. DEDICTD TO THIS USE BY YR.2000 --STA.
85035	HAB., INDICATED ANIMAL USES THIS TYPE IN WINTER
85036	HAB., INDICATED ANIMAL USES THIS TYPE IN SPRING
85037	HAB., INDICATED ANIMAL USES THIS TYPE IN SUMMER
85038	HAB., INDICATED ANIMAL USES THIS TYPE IN FALL
85039	HAB., INDICATED ANML USES THIS TYPE FOR WINTERING
85040	HAB., INDICATED ANML USES THIS TYPE FOR FEEDING
85041	HAB., INDICATED ANML USES TYPE FOR REARING YOUNG
85042	HAB., INDICATED BIRD USES THIS TYPE FOR NESTING
85043	HAB., INDICATED ANML USES THIS TYPE FOR SHELTER
85044	HAB., INDICATED ANML USES THIS TYPE FOR REST AREA
85045	ANML, SHOWS PRESENCE/ABSNC OF COMMENTS ON THIS ANML
85046	HAB.,ACRES OCCUPIED BY THIS ANML THIS UNIT & CO.
85050	ANIMALS ARE NOT PRESENT THIS STATION
85051	ANIMALS, ONLY A FEW ARE PRESENT THIS STATION
85052	ANIMALS COMMONLY SEEN; USE MODERATE THIS STATION
85053	ANIMALS FREQUENTLY SEEN; USE HEAVY THIS STATION
85070	OWNERSHIP (.1) AND ACCESS (.2) BY YEAR
85071	PRIVATE OWNERSHIP AND ACCESS MILEAGE
85072	FEDERAL OWNERSHIP AND ACCESS MILEAGE
85073	STATE OWNERSHIP AND ACCESS MILEAGE
85074	COUNTY OWNERSHIP AND ACCESS MILEAGE
85075	CITY OWNERSHIP AND ACCESS MILEAGE
85076	WATER YEAR DATA REFERS TO

<b>STORET Code</b>	<b>Description of STORET Parameters Not Suitable for Statistical Analysis</b>
85077	CALENDAR YEAR DATA REFERS TO
85088	MONTHS POLLUTION IS A PROBLEM JAN THRU JUNE
85089	MONTHS POLLUTION IS A PROBLEM JULY TO DECEMBER
85090	MAN-CAUSED CHANNEL CHANGE IN MILES
85091	STREAM BANK HABITAT DESTROYED IN MILES
85092	STREAMBED SILTED IN MILES
85093	TURBIDITY PROBLEM IN MILES
85094	SEVERITY: 1=ELIMINATES 2=INTERFERES 3=NO PROBLEM
85095	DURATION OF TURBIDITY PROBLEM IN MONTHS
85096	SEASON OF NATURAL DRY CHANNEL 1=SP 2=SU 3=F 4=W
85097	NATURAL DRY CHANNEL IN MILES
85098	MAN-CAUSED DRY CHANNEL SEASON 1=SP 2=SU 3=F 4=W
85099	MAN-CAUSED DRY CHANNEL IN MILES
85100	YEAR BARRIER IS PRESENT
85101	NUMBER OF NATURAL BARRIERS
85102	MILES BLOCKED BY NATURAL BARRIERS
85103	NUMBER OF NATURAL BARRIERS TO BE REMOVED
85104	NUMBER OF DAMS AND MAN CAUSED OBSTRUCTIONS
85105	MILES BLOCKED BY DAMS OR MAN CAUSED OBSTRUCTIONS
85106	NUMBER OF DAMS TO BE ALTERED
85107	MILES OF STREAM OCCUPIED BY IMPOUNDMENT
85108	LOWER END OF SECTION COVERED BY THIS FORM
85109	UPPER END OF SECTION COVERED BY THIS FORM
85110	LOWER LIMIT THIS SPECIES THIS FORM BY RIVER MILE
85111	UPPER LIMIT THIS SPECIES THIS FORM BY RIVER MILE
85112	STREAM SURVEY:1=COMPLETE 2=INCOMPLETE 3=NONE
85113	ABUNDANCE: 1=FSHWY/TAG&R 2=SURVEY 3=EST PLUS 4=EST
85114	ABUNDANCE: N=S&ST 1=ABUNDANT 4=SCARCE RGH FSH 3=SCARCE
85116	SQUARE YARDS OF SPAWNING AREA IN 1970

<b>STORET Code</b>	<b>Description of STORET Parameters Not Suitable for Statistical Analysis</b>
85117	SQUARE YARDS OF SPAWNING AREA IN 1980
85118	SQUARE YARDS OF SPAWNING AREA IN 1990
85119	SQUARE YARDS OF SPAWNING AREA IN 2000
85120	MILES OF REARING AREA IN 1970
85121	MILES OF REARING AREA IN 1980
85122	MILES OF REARING AREA IN 1990
85123	MILES OF REARING AREA IN 2000
85124	CATCH BY SPORT ANGLING IN 1970
85125	RECREATION DAYS SPENT ANGLING IN 1970
85126	RECREATION DAYS SPENT ANGLING IN 1980
85127	RECREATION DAYS SPENT ANGLING IN 1990
85128	RECREATION DAYS SPENT ANGLING IN 2000
85129	CONTRIBUTION TO COMMERCIAL CATCH IN 1970
85130	PERCENT OF TOTAL FISHING DONE FROM BOAT IN 1970
85131	PERCENT OF TOTAL FISHING DONE FROM BANK IN 1970
85132	PERCENT OF TOTAL FISHING DONE WITH LURE IN 1970
85133	PERCENT OF TOTAL FISHING DONE WITH BAIT IN 1970
85134	PERCENT OF TOTAL FISHING DONE WITH A FLY IN 1970
85146	YEAR THIS FACTOR HAS A LIMITING EFFECT
85157	MAN DAYS OF WATER SKIING
85158	SEVERITY: 1=INTERFERES 2=NO INTER. 3=NO ACTIVITY
85159	MAN DAYS OF BOATING OTHER THAN ANGLING
85160	SEVERITY: 1=INTERFERES 2=NO INTER. 3=NO ACTIVITY
85161	MAN DAYS OF SWIMMING
85162	SEVERITY: 1=INTERFERES 2=NO INTER. 3=NO ACTIVITY
85163	SEVERITY: 1=INTERFERES 2=NO INTER. 3=NOT PRESENT
85165	NUMBER OF MONTHS SUSPENDED SOLIDS ARE A PROBLEM
85167	NUMBER OF MONTHS PLANKTON IS A PROBLEM
85168	1=ELIMINATE PROD 2=REDUCE 3=NO INTER. 4=NOT PRES

<b>STORET Code</b>	<b>Description of STORET Parameters Not Suitable for Statistical Analysis</b>
85169	1=ELIMINATE PROD 2=UNDESIRABLE 3=REDUCE 4=NO PROB
85170	1=ELIMINATE PROD 2=UNDESIRABLE 3=REDUCE 4=NO PROB
85171	1=ELIMINATE PROD 2=UNDESIRABLE 3=REDUCE 4=NO PROB
85172	1=ELIMINATE PROD 2=UNDESIRABLE 3=REDUCE 4=NO PROB
85173	1=ELIMINATE PROD 2=UNDESIRABLE 3=REDUCE 4=NO PROB
85174	1=ELIMINATE PROD 2=UNDESIRABLE 3=REDUCE 4=NO PROB
85175	1=ELIMINATE PROD 2=UNDESIRABLE 3=REDUCE 4=NO PROB
85176	1=ELIMINATE PROD 2=UNDESIRABLE 3=REDUCE 4=NO PROB
85177	1=ELIMINATE PROD 2=UNDESIRABLE 3=REDUCE 4=NO PROB
85178	1=ELIMINATE PROD 2=UNDESIRABLE 3=REDUCE 4=NO PROB
85179	YEAR THIS NUMBER OF FACILITIES PRESENT
85180	NUMBER OF BOAT RAMPS
85181	NUMBER OF MOORAGES
85182	NUMBER OF PICNIC AREAS
85183	NUMBER OF CAMP AREAS
85184	NUMBER OF RESORTS
85185	YEAR THIS ZONED AREA PRESENT
85186	ACRES SET ASIDE FOR OTHER BOATING
85187	ACRES SET ASIDE FOR WATER SKIING
85188	MILES OF SHORE LOST TO ACCESS BY HOME SITES
85189	TOTAL MILES OF SHORELINE
85193	WILL RECR BE INC BY RELEASE OF FINGERL 0=NO 1=YES
85195	CATCH AND RECREATION ESTIMATE 1=BEST 4=POOREST
85333	PRECIPITATION-SAMPLE COLLECTION TIME-CODE- NES
85538	GAMMA SCAN DATE (YR,MO,DAY)
85539	DATE OF REPORT (YR,MO,DAY)
85658	TIME NIGHT CO2 HR
85661	TIME, INTERVAL DAY CO2 HR



## Appendix F

### National EPA Water Quality Criteria Summary<sup>1</sup>

The following table presents the national water quality criteria that were used to assess water quality data on a station-by-station basis and within the entire study area. Criteria are, for the most part, maximum values (except for dissolved oxygen, pH, and as noted). Criteria exist in any of four categories: Fresh Acute, Drinking Water, Marine Acute, and Other. Acute criteria are the highest 1-hour average concentrations which should not result in unacceptable impacts to aquatic organisms in either fresh or marine waters, respectively. The Drinking Water criteria are intended for human consumption; while the Other criteria represents National Park Service or other concerns. Parameters are listed in ascending order by STORET code. It is important to note that similar parameters often have non-consecutive codes. Consequently, scanning the entire list is necessary to obtain the criteria for all parameters of a particular type (eg. lead, copper, etc.). Refer to the Parameter Period of Record Tabulation to obtain the STORET code for any parameter measured in the park.

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
	00070				50 <sup>l</sup>	TURBIDITY, JACKSON CANDLE UNITS	JTU	Physical
	00076				50 <sup>l</sup>	TURBIDITY, HACH TURBIDIMETER, FORMAZIN TUR. UNITS	FTU	Physical
14808798	00154		250 <sup>s</sup>			SULFATE (AS S) WHOLE WATER	MG/L	General Inorganic
7782447	00299				4.0 <sup>u</sup>	OXYGEN, DISSOLVED, ANALYSIS BY PROBE	MG/L	Dissolved Oxygen
7782447	00300				4.0 <sup>u</sup>	OXYGEN, DISSOLVED	MG/L	Dissolved Oxygen
	00400				≤6.5, ≥9.0 <sup>#</sup>	PH	SU	Physical
	00403				≤6.5, ≥9.0 <sup>#</sup>	PH, LAB	SU	Physical
	00406				≤6.5, ≥9.0 <sup>#</sup>	PH, FIELD	SU	Physical

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<sup>1</sup>Sources: (1) U.S. Environmental Protection Agency, Quality Criteria for Water 1995, Final Draft; (2) U.S. Environmental Protection Agency, 40 CFR 141 - National Primary Drinking Water Regulations, and 40 CFR 143 - National Secondary Drinking Water Regulations, July 1, 1994; and (3) Others as Noted in Footnotes.

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
471341	00409				<200"	ALKALINITY, TOTAL, LOW LEVEL GRAN ANALYSIS	UEQ/L	General Inorganic
17778880	00613		1			NITRITE NITROGEN, DISSOLVED AS N	MG/L	Nitrogen
17778880	00615		1			NITRITE NITROGEN, TOTAL AS N	MG/L	Nitrogen
17778880	00618		10			NITRATE NITROGEN, DISSOLVED AS N	MG/L	Nitrogen
17778880	00620		10			NITRATE NITROGEN, TOTAL AS N	MG/L	Nitrogen
17778880	00628		10			NITRITE + NITRATE, SUSPENDED AS N	MG/L	Nitrogen
17778880	00630		10			NITRITE PLUS NITRATE, TOTAL 1 DET.	MG/L	Nitrogen
17778880	00631		10			NITRITE PLUS NITRATE, DISSOLVED 1 DET.	MG/L	Nitrogen
57125	00718	22	200	1.0		CYANIDE, WEAK ACID, DISSOCIABLE, WATER, WHOLE	UG/L	General Inorganic
57125	00719	22	200	1.0		CYANIDE, FREE,IN WATER&WASTEWATERS, HBG METHOD	UG/L	General Inorganic
57125	00720	0.022	0.2	0.001		CYANIDE, TOTAL	MG/L	General Inorganic
57125	00722	0.022	0.2	0.001		CYANIDE, FREE (AMENABLE TO CHLORINATION)	MG/L	General Inorganic
57125	00723	22	200	1.0		CYANIDE, DISSOLVED STD METHOD	UG/L	General Inorganic
57125	00724	22	200	1.0		CYANIDE COMPLEXED TO A RANGE OF COMPNDS, WATER	UG/L	General Inorganic
16887006	00940	860	250 <sup>8</sup>			CHLORIDE,TOTAL IN WATER	MG/L	General Inorganic
16887006	00941	860	250 <sup>8</sup>			CHLORIDE, DISSOLVED IN WATER	MG/L	General Inorganic
14808798	00945		250 <sup>8</sup>			SULFATE, TOTAL (AS SO4)	MG/L	General Inorganic
14808798	00946		250 <sup>8</sup>			SULFATE, DISSOLVED (AS SO4)	MG/L	General Inorganic
1332214	00948		7000000			ASBESTOS, WHOLE SAMPLE	CNT/L	General Inorganic
16984488	00950		4.0			FLUORIDE, DISSOLVED AS F	MG/L	General Inorganic

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
16984488	00951		4.0			FLUORIDE, TOTAL AS F	MG/L	General Inorganic
7782414	00953		4000			FLUORINE, TOTAL	UG/L	General Inorganic
7440382	00978	360	50	69		ARSENIC, TOTAL RECOVERABLE IN WATER AS AS	UG/L	Metal
7782492	00981	20	50	300		SELENIUM, TOTAL RECOVERABLE IN WATER AS SE	UG/L	Metal
7440280	00982	1400*	2.0	2130*		THALLIUM, TOTAL RECOVERABLE IN WATER AS TL	UG/L	Metal
7782492	00990	20	50	300		SELENITE, TOTAL RECOVERABLE INORGANIC	UG/L	Metal
7440382	00991	360	50	69		ARSENIC, TOTAL RECOVERABLE TRIVALENT INORGANIC	UG/L	Metal
7440382	00995	360	50	69		ARSENIC, INORGANIC DISS	UG/L	Metal
7440382	00996	360	50	69		ARSENIC, INORGANIC SUSP	UG/L	Metal
7440382	00997	360	50	69		ARSENIC, INORGANIC TOT	UG/L	Metal
7440417	00998	130*	4.0			BERYLLIUM, TOTAL RECOVERABLE IN WATER AS BE	UG/L	Metal
7440382	01000	360	50	69		ARSENIC, DISSOLVED	UG/L	Metal
7440382	01001	360	50	69		ARSENIC, SUSPENDED	UG/L	Metal
7440382	01002	360	50	69		ARSENIC, TOTAL	UG/L	Metal
7440393	01005		2000			BARIUM, DISSOLVED	UG/L	Metal
7440393	01006		2000			BARIUM, SUSPENDED	UG/L	Metal
7440393	01007		2000			BARIUM, TOTAL	UG/L	Metal
7440393	01009		2000			BARIUM, TOTAL RECOVERABLE IN WATER AS BA	UG/L	Metal
7440417	01010	130*	4.0			BERYLLIUM, DISSOLVED	UG/L	Metal
7440417	01011	130*	4.0			BERYLLIUM, SUSPENDED	UG/L	Metal

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
7440417	01012	130 <sup>+</sup>	4.0			BERYLLIUM, TOTAL	UG/L	Metal
7440439	01025	3.9 <sup>+</sup>	5.0	43		CADMIUM, DISSOLVED	UG/L	Metal
7440439	01026	3.9 <sup>+</sup>	5.0	43		CADMIUM, SUSPENDED	UG/L	Metal
7440439	01027	3.9 <sup>+</sup>	5.0	43		CADMIUM, TOTAL	UG/L	Metal
7440473	01030		100			CHROMIUM, DISSOLVED	UG/L	Metal
7440473	01031		100			CHROMIUM, SUSPENDED	UG/L	Metal
7440473	01032	16	100	1100		CHROMIUM, HEXAVALENT	UG/L	Metal
16065831	01033	1700 <sup>+</sup>	100	10300 <sup>+</sup>		CHROMIUM, TRI-VAL	UG/L	Metal
7440473	01034		100			CHROMIUM, TOTAL	UG/L	Metal
7440508	01040	18 <sup>+</sup>	1300 <sup>a</sup>	2.9		COPPER, DISSOLVED	UG/L	Metal
7440508	01041	18 <sup>+</sup>	1300 <sup>a</sup>	2.9		COPPER, SUSPENDED	UG/L	Metal
7440508	01042	18 <sup>+</sup>	1300 <sup>a</sup>	2.9		COPPER, TOTAL	UG/L	Metal
7439921	01049	82 <sup>+</sup>	15 <sup>a</sup>	220		LEAD, DISSOLVED	UG/L	Metal
7439921	01050	82 <sup>+</sup>	15 <sup>a</sup>	220		LEAD, SUSPENDED	UG/L	Metal
7439921	01051	82 <sup>+</sup>	15 <sup>a</sup>	220		LEAD, TOTAL	UG/L	Metal
7440280	01057	1400 <sup>+</sup>	2.0	2130 <sup>+</sup>		THALLIUM, DISSOLVED	UG/L	Metal
7440280	01058	1400 <sup>+</sup>	2.0	2130 <sup>+</sup>		THALLIUM, SUSPENDED	UG/L	Metal
7440280	01059	1400 <sup>+</sup>	2.0	2130 <sup>+</sup>		THALLIUM, TOTAL	UG/L	Metal
7440020	01065	1400 <sup>+</sup>	100	75		NICKEL, DISSOLVED	UG/L	Metal
7440020	01066	1400 <sup>+</sup>	100	75		NICKEL, SUSPENDED	UG/L	Metal

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
7440020	01067	1400 <sup>+</sup>	100	75		NICKEL, TOTAL	UG/L	Metal
7440020	01074	1400 <sup>+</sup>	100	75		NICKEL, TOTAL RECOVERABLE IN WATER AS NI	UG/L	Metal
7440224	01075	4.1 <sup>+</sup>	100 <sup>s</sup>	0.12		SILVER, DISSOLVED	UG/L	Metal
7440224	01076	4.1 <sup>+</sup>	100 <sup>s</sup>	0.12		SILVER, SUSPENDED	UG/L	Metal
7440224	01077	4.1 <sup>+</sup>	100 <sup>s</sup>	0.12		SILVER, TOTAL	UG/L	Metal
7440224	01079	4.1 <sup>+</sup>	100 <sup>s</sup>	0.12		SILVER, TOTAL RECOVERABLE IN WATER AS AG	UG/L	Metal
7440508	01089	0.018 <sup>+</sup>	1.3 <sup>a</sup>	0.0029		COPPER AS SUSPENDED BLACK OXIDE IN WATER	MG/L	General Inorganic
7440666	01090	120 <sup>+</sup>	5000 <sup>s</sup>	95		ZINC, DISSOLVED	UG/L	Metal
7440666	01091	120 <sup>+</sup>	5000 <sup>s</sup>	95		ZINC, SUSPENDED	UG/L	Metal
7440666	01092	120 <sup>+</sup>	5000 <sup>s</sup>	95		ZINC, TOTAL	UG/L	Metal
7440666	01094	120 <sup>+</sup>	5000 <sup>s</sup>	95		ZINC, TOTAL RECOVERABLE IN WATER AS ZN	UG/L	Metal
7440360	01095	88 <sup>p</sup>	6.0	1500 <sup>p</sup>		ANTIMONY, DISSOLVED	UG/L	Metal
7440360	01096	88 <sup>p</sup>	6.0	1500 <sup>p</sup>		ANTIMONY, SUSPENDED	UG/L	Metal
7440360	01097	88 <sup>p</sup>	6.0	1500 <sup>p</sup>		ANTIMONY, TOTAL	UG/L	Metal
7440439	01113	3.9 <sup>+</sup>	5.0	43		CADMIUM, TOTAL RECOVERABLE IN WATER AS CD	UG/L	Metal
7439921	01114	82 <sup>+</sup>	15 <sup>a</sup>	220		LEAD, TOTAL RECOVERABLE IN WATER AS PB	UG/L	Metal
7440473	01118		100			CHROMIUM TOTAL RECOVERABLE IN WATER AS CR	UG/L	Metal
7440508	01119	18 <sup>+</sup>	1300 <sup>a</sup>	2.9		COPPER, TOTAL RECOVERABLE IN WATER AS CU	UG/L	Metal
7440280	01124	1400 <sup>*</sup>	2.0	2130 <sup>*</sup>		THALLIUM, ACID SOLUBLE, WATER, WHOLE	UG/L	Metal
7440280	01128	1400 <sup>*</sup>	2.0	2130 <sup>*</sup>		THALLIUM, TOTAL RECOVERABLE <95%	UG/L	Metal

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
7782492	01145	20	50	300		SELENIUM, DISSOLVED	UG/L	Metal
7782492	01146	20	50	300		SELENIUM, SUSPENDED	UG/L	Metal
7782492	01147	20	50	300		SELENIUM, TOTAL	UG/L	Metal
7782492	01167	20	50	300		SELENIUM, ACID SOLUBLE, WATER, WHOLE	UG/L	Metal
18540299	01220	16	100	1100		CHROMIUM, HEXAVALENT, DISSOLVED	UG/L	Metal
7440360	01268	88 <sup>p</sup>	6.0	1500 <sup>p</sup>		ANTIMONY (SB), WATER, TOTAL RECOVERABLE	UG/L	Metal
57125	01291	22	200	1.0		CYANIDE, FILTERABLE, TOTAL IN WATER	UG/L	General Inorganic
7440666	01303	0.120 <sup>+</sup>	5.0 <sup>s</sup>	0.095		ZINC, POTENTIALLY DISSOLVED WATER	MG/L	Metal
7440224	01304	0.0041 <sup>+</sup>	0.1 <sup>s</sup>	0.00012		SILVER, POTENTIALLY DISSOLVED WATER	MG/L	Metal
7440508	01306	0.018 <sup>+</sup>	1.3 <sup>a</sup>	0.0029		COPPER, POTENTIALLY DISSOLVED WATER	MG/L	Metal
18540299	01307	0.016	0.1	1.1		CHROMIUM, HEXAVALENT, POTENTIALLY DISSOLVED	MG/L	Metal
7440382	01309	0.36	0.05	0.069		ARSENIC, POTENTIALLY, DISSOLVED, WATER	MG/L	Metal
7440393	01311		2.0			BARIUM, POTENTIALLY, DISSOLVED, WATER	MG/L	Metal
7440417	01312	0.13 <sup>*</sup>	0.004			BERYLLIUM, POTENTIALLY, DISSOLVED, WATER	MG/L	Metal
7440439	01313	0.0039 <sup>+</sup>	0.005	0.043		CADMIUM, POTENTIALLY, DISSOLVED, WATER	MG/L	Metal
16065831	01314	1.7 <sup>+</sup>	0.1	10.3 <sup>*</sup>		CHROMIUM, TRIVALENT, POTENTIALLY DISSOLVED	MG/L	Metal
7439921	01318	0.082 <sup>+</sup>	0.015 <sup>a</sup>	0.220		LEAD, POTENTIALLY, DISSOLVED, WATER	MG/L	Metal
7439976	01321	0.0024	0.002	0.0021		MERCURY, POTENTIALLY, DISSOLVED, WATER	MG/L	Metal
7440020	01322	1.4 <sup>+</sup>	0.1	0.075		NICKEL, POTENTIALLY, DISSOLVED, WATER	MG/L	Metal
7782492	01323	0.020	0.050	0.300		SELENIUM, POTENTIALLY, DISSOLVED, WATER	MG/L	Metal

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
7440280	01324	1.4 <sup>*</sup>	0.002	2.13 <sup>*</sup>		THALLIUM, POTENTIALLY, DISSOLVED, WATER	MG/L	Metal
7440611	01326		0.020 <sup>c</sup>			URANIUM, POTENTIALLY DISSOLVED, WATER	MG/L	Metal
7440224	01523	4.1 <sup>+</sup>	100 <sup>s</sup>	0.12		SILVER, IONIC	UG/L	Metal
50328	03648		0.2			BENZO (A) PYRENE, LIQUID FRACTION, ELUTRIATE	UG/L	General Organic
122349	04035		4.0			SIMAZINE, DISSOLVED, WATER, TOTAL RECOVERABLE	UG/L	Pesticide
10028178	04124		20 <sup>r</sup>			TRITIUM, TOTAL, WATER	PC/ML	Radiological
10028178	07000		20000 <sup>r</sup>			TRITIUM, TOTAL	PC/L	Radiological
10028178	07005		20000 <sup>r</sup>			TRITIUM, DISSOLVED	PC/L	Radiological
10028178	07010		20000 <sup>r</sup>			TRITIUM, SUSPENDED	PC/L	Radiological
	09501		5.0			RADIUM 226, TOTAL	PC/L	Radiological
	09503		5.0			RADIUM 226, DISSOLVED	PC/L	Radiological
	09505		5.0			RADIUM 226, SUSPENDED	PC/L	Radiological
	11500		5.0			RADIUM 226 + RADIUM 228, DISSOLVED	PC/L	Radiological
	11501		5.0			RADIUM 228, TOTAL	PC/L	Radiological
	11503		5.0			RADIUM 226 + RADIUM 228, TOTAL	PC/L	Radiological
10098972	13501		8.0 <sup>r</sup>			STRONTIUM 90, TOTAL	PC/L	Radiological
10098972	13503		8.0 <sup>r</sup>			STRONTIUM 90, DISSOLVED	PC/L	Radiological
10098972	13505		8.0 <sup>r</sup>			STRONTIUM 90, SUSPENDED	PC/L	Radiological
7782492	22675	20	50	300		SELENIUM, DISSOLVED ORGANIC	UG/L	Metal
7782492	22676	20	50	300		SELENIUM, HEXAVALENT, DISSOLVED	UG/L	Metal

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
7782492	22677	20	50	300		SELENIUM, TETRAVALENT, DISSOLVED	UG/L	Metal
7440382	22678	360	50	69		ARSENIC, DISSOLVED ORGANIC	UG/L	Metal
7440382	22679	850*	50	2319*		ARSENIC, PENTAVALENT, DISSOLVED	UG/L	Metal
7440382	22680	360	50	69		ARSENIC, TRIVALENT, DISSOLVED	UG/L	Metal
7440611	22703		20°			URANIUM, NATURAL DISSOLVED	UG/L	Metal
7440611	22705		20°			URANIUM, NATURAL SUSPENDED	UG/L	Metal
7440611	22706		20°			URANIUM, TOTAL AS U308	UG/L	Metal
7440611	22708		0.020°			URANIUM, NATURAL, TOTAL	MG/L	Radiological
7440611	28011		20°			URANIUM, NATURAL, TOTAL	UG/L	Radiological
88857	30191		7.0			DINOSEB, WATER, WHOLE RECOVERABLE	UG/L	Pesticide
75990	30200		200			DALAPON, WATER, WHOLE RECOVERABLE	UG/L	Pesticide
106934	30203		0.05			ETHANE, 1,2-DIBROMO-, WATER, WHOLE, RECOVERABLE	UG/L	Pesticide
	31501		1.0 <sup>n</sup>		1000 <sup>b</sup>	COLIFORM, TOTAL, MEMBRANE FILTER, IMMED.	CFU/100ML	Bacteriological
	31503		1.0 <sup>n</sup>		1000 <sup>b</sup>	COLIFORM, TOTAL, MEMBRANE FILTER, DELAY. M-ENDO	CFU/100ML	Bacteriological
	31504		1.0 <sup>n</sup>		1000 <sup>b</sup>	COLIFORM, TOTAL, MEMBRANE FILTER, IMMED. LES-ENDO	CFU/100ML	Bacteriological
	31505		1.0 <sup>n</sup>		1000 <sup>b</sup>	COLIFORM, TOTAL, MPN, CONF. TEST 35C (TUBE 31506)	MPN/100ML	Bacteriological
	31506		1.0 <sup>n</sup>		1000 <sup>b</sup>	COLIFORM, TOTAL, MPN, CONF. TEST, TUBE CONFIG	MPN/100ML	Bacteriological
	31507		1.0 <sup>n</sup>		1000 <sup>b</sup>	COLIFORM, TOTAL, MPN, COMP. TEST 35C (TUBE 31508)	MPN/100ML	Bacteriological
	31508		1.0 <sup>n</sup>		1000 <sup>b</sup>	COLIFORM, TOTAL, MPN, COMP. TEST, TUBE CONFIG	MPN/100ML	Bacteriological
	31613				200 <sup>^</sup>	FECAL COLIFORM, MEMBRANE FILTER, AGAR	CFU/100ML	Bacteriological



C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
	31614				200 <sup>^</sup>	FECAL COLIFORM, MPN, TUBE CONFIGURATION	MPN/100ML	Bacteriological
	31615				200 <sup>^</sup>	FECAL COLIFORM, MPN, EC MED, 44.5C (TUBE 31614)	MPN/100ML	Bacteriological
	31616				200 <sup>^</sup>	FECAL COLIFORM, MEMBRANE FILTER, BROTH, 44.5C	CFU/100ML	Bacteriological
	31617				200 <sup>^</sup>	FECAL COLIFORM, MPN, EUKMAN, 44.5C (TUBE 31618)	MPN/100ML	Bacteriological
	31625				200 <sup>^</sup>	FECAL COLIFORM, MF, M-FC, 0.7 UM	CFU/100ML	Bacteriological
	31648				126 <sup>^</sup>	E. COLI, MTEC, MF	CFU/100ML	Bacteriological
	31649				33 <sup>^</sup>	ENTEROCOCCI, ME, MF	CFU/100ML	Bacteriological
67663	32003	28900*	100 <sup>i</sup>			CARBON CHLOROFORM AND CARBON ALCOHOL EXTRS.,TOTAL	UG/L	General Organic
67663	32005	28900*	100 <sup>i</sup>			CARBON CHLOROFORM EXTRACTABLES	UG/L	General Organic
67663	32021	28900*	100 <sup>i</sup>			CARBON CHLOROFORM EXTRACTS, ETHER INSOLUBLES OF	UG/L	General Organic
67663	32022	28900*	100 <sup>i</sup>			CARBON CHLOROFORM EXTRACTS, WATER SOLUBLES OF	UG/L	General Organic
75274	32101		100 <sup>i</sup>			BROMODICHLOROMETHANE, WHOLE WATER	UG/L	General Organic
56235	32102	35200*	5.0	50000*		CARBON TETRACHLORIDE, WHOLE WATER	UG/L	General Organic
107062	32103	118000*	5.0	113000*		1,2-DICHLOROETHANE,WHOLE WATER	UG/L	General Organic
75252	32104		100 <sup>i</sup>			BROMOFORM, WHOLE WATER	UG/L	General Organic
124481	32105		100 <sup>i</sup>			DIBROMOCHLOROMETHANE, WHOLE WATER	UG/L	General Organic
67663	32106	28900*	100 <sup>i</sup>			CHLOROFORM, WHOLE WATER	UG/L	General Organic
56235	32260	35.2*	0.005	50*		CARBON TETRACHLORIDE EXTRACTABLES	MG/L	General Organic
67663	32270	28.9*	0.1 <sup>i</sup>			CHLOROFORM EXTRACTABLES TOTAL	MG/L	General Organic
108883	34010	17500*	1000	6300*		TOLUENE IN WTR SMPLE GC-MS, HEXADECONE EXTR.	UG/L	General Organic

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
1330207	34020		10000			XYLENES IN WTR SMPLE GC-MS, HEXADECONE EXTR.	UG/L	General Organic
83329	34205	1700*		970*		ACENAPHTHENE, TOTAL	UG/L	General Organic
83329	34206	1700*		970*		ACENAPHTHENE, DISSOLVED	UG/L	General Organic
83329	34207	1700*		970*		ACENAPHTHENE, SUSPENDED	UG/L	General Organic
107028	34210	68*		55*		ACROLEIN, TOTAL	UG/L	Pesticide
107028	34211	68*		55*		ACROLEIN, DISSOLVED	UG/L	Pesticide
107028	34212	68*		55*		ACROLEIN, SUSPENDED	UG/L	Pesticide
107131	34215	7550*				ACRYLONITRILE, TOTAL	UG/L	General Organic
107131	34216	7550*				ACRYLONITRILE, DISSOLVED	UG/L	General Organic
107131	34217	7550*				ACRYLONITRILE, SUSPENDED	UG/L	General Organic
71432	34235	5300*	5.0	5100*		BENZENE, DISSOLVED	UG/L	General Organic
71432	34236	5300*	5.0	5100*		BENZENE, SUSPENDED	UG/L	General Organic
92875	34239	2500*				BENZIDINE, DISSOLVED	UG/L	General Organic
92875	34240	2500*				BENZIDINE, SUSPENDED	UG/L	General Organic
58899	34265	2.0	0.2	0.16		R-BHC (LINDANE) GAMMA, DISSOLVED	UG/L	Pesticide
58899	34266	2.0	0.2	0.16		R-BHC (LINDANE) GAMMA, SUSPENDED	UG/L	Pesticide
75252	34288		100 <sup>i</sup>			BROMOFORM, DISSOLVED	UG/L	General Organic
75252	34289		100 <sup>i</sup>			BROMOFORM, SUSPENDED	UG/L	General Organic
56235	34297	35200*	5.0	50000*		CARBON TETRACHLORIDE, DISSOLVED	UG/L	General Organic
56235	34298	35200*	5.0	50000*		CARBON TETRACHLORIDE, SUSPENDED	UG/L	General Organic

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
108907	34301		100			CHLOROBENZENE, TOTAL	UG/L	General Organic
108907	34302		100			CHLOROBENZENE, DISSOLVED	UG/L	General Organic
108907	34303		100			CHLOROBENZENE, SUSPENDED	UG/L	General Organic
124481	34306		100 <sup>i</sup>			CHLORODIBROMOMETHANE, TOTAL	UG/L	General Organic
124481	34307		100 <sup>i</sup>			CHLORODIBROMOMETHANE, DISSOLVED	UG/L	General Organic
124481	34308		100 <sup>i</sup>			CHLORODIBROMOMETHANE, SUSPENDED	UG/L	General Organic
67663	34316	28900*	100 <sup>i</sup>			CHLOROFORM, DISSOLVED	UG/L	General Organic
67663	34317	28900*	100 <sup>i</sup>			CHLOROFORM, SUSPENDED	UG/L	General Organic
57125	34325	0.022	0.2	0.001		CYANIDE, SUSPENDED	MG/L	General Inorganic
75274	34328		100 <sup>i</sup>			DICHLOROBROMOMETHANE, DISSOLVED	UG/L	General Organic
75274	34329		100 <sup>i</sup>			DICHLOROBROMOMETHANE, SUSPENDED	UG/L	General Organic
122667	34346	270*				1,2-DIPHENYLHYDRAZINE, TOTAL	UG/L	General Organic
122667	34347	270*				1,2-DIPHENYLHYDRAZINE, DISSOLVED	UG/L	General Organic
122667	34348	270*				1,2-DIPHENYLHYDRAZINE, SUSPENDED	UG/L	General Organic
33213659	34356	0.22		0.034		ENDOSULFAN, BETA, TOTAL	UG/L	Pesticide
33213659	34357	0.22		0.034		ENDOSULFAN, BETA, DISSOLVED	UG/L	Pesticide
33213659	34358	0.22		0.034		ENDOSULFAN, BETA, SUSPENDED	UG/L	Pesticide
959988	34361	0.22		0.034		ENDOSULFAN, ALPHA, TOTAL	UG/L	Pesticide
959988	34362	0.22		0.034		ENDOSULFAN, ALPHA, DISSOLVED	UG/L	Pesticide
959988	34363	0.22		0.034		ENDOSULFAN, ALPHA, SUSPENDED	UG/L	Pesticide

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
100414	34371	32000*	700	430*		ETHYLBENZENE, TOTAL	UG/L	General Organic
100414	34372	32000*	700	430*		ETHYLBENZENE, DISSOLVED	UG/L	General Organic
100414	34373	32000*	700	430*		ETHYLBENZENE, SUSPENDED	UG/L	General Organic
206440	34376	3980*		40*		FLUORANTHENE, TOTAL	UG/L	General Organic
206440	34377	3980*		40*		FLUORANTHENE, DISSOLVED	UG/L	General Organic
206440	34378	3980*		40*		FLUORANTHENE, SUSPENDED	UG/L	General Organic
77474	34386	7.0*	50	7.0*		HEXACHLOROCYCLOPENTADIENE, TOTAL	UG/L	General Organic
77474	34387	7.0*	50	7.0*		HEXACHLOROCYCLOPENTADIENE, DISSOLVED	UG/L	General Organic
77474	34388	7.0*	50	7.0*		HEXACHLOROCYCLOPENTADIENE, SUSPENDED	UG/L	General Organic
87683	34391	90*		32*		HEXACHLOROBUTADIENE, TOTAL	UG/L	General Organic
87683	34392	90*		32*		HEXACHLOROBUTADIENE, DISSOLVED	UG/L	General Organic
87683	34393	90*		32*		HEXACHLOROBUTADIENE, SUSPENDED	UG/L	General Organic
67721	34396	980*		940*		HEXACHLOROETHANE, TOTAL	UG/L	General Organic
67721	34397	980*		940*		HEXACHLOROETHANE, DISSOLVED	UG/L	General Organic
67721	34398	980*		940*		HEXACHLOROETHANE, SUSPENDED	UG/L	General Organic
118741	34401	6.0 <sup>P</sup>	1.0			HEXACHLOROBENZENE, DISSOLVED	UG/L	General Organic
118741	34402	6.0 <sup>P</sup>	1.0			HEXACHLOROBENZENE, SUSPENDED	UG/L	General Organic
193395	34403		0.40 <sup>c</sup>			INDENO (1,2,3-CD) PYRENE, TOTAL	UG/L	General Organic
193395	34404		0.40 <sup>c</sup>			INDENO (1,2,3-CD) PYRENE, DISSOLVED	UG/L	General Organic
193395	34405		0.40 <sup>c</sup>			INDENO (1,2,3-CD) PYRENE, SUSPENDED	UG/L	General Organic

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
78591	34408	117000*		12900*		ISOPHORONE, TOTAL	UG/L	Pesticide
78591	34409	117000*		12900*		ISOPHORONE, DISSOLVED	UG/L	Pesticide
78591	34410	117000*		12900*		ISOPHORONE, SUSPENDED	UG/L	Pesticide
75092	34423		5.0			METHYLENE CHLORIDE, TOTAL	UG/L	General Organic
75092	34424		5.0			METHYLENE CHLORIDE, DISSOLVED	UG/L	General Organic
75092	34425		5.0			METHYLENE CHLORIDE, SUSPENDED	UG/L	General Organic
91203	34443	2300*		2350*		NAPHTHALENE, DISSOLVED	UG/L	General Organic
91203	34444	2300*		2350*		NAPHTHALENE, SUSPENDED	UG/L	General Organic
98953	34447	27000*		6680*		NITROBENZENE, TOTAL	UG/L	General Organic
98953	34448	27000*		6680*		NITROBENZENE, DISSOLVED	UG/L	General Organic
98953	34449	27000*		6680*		NITROBENZENE, SUSPENDED	UG/L	General Organic
59507	34452	30*				PARACHLOROMETA CRESOL, TOTAL	UG/L	General Organic
59507	34453	30*				PARACHLOROMETA CRESOL, DISSOLVED	UG/L	General Organic
59507	34454	30*				PARACHLOROMETA CRESOL, SUSPENDED	UG/L	General Organic
87865	34459	20***	1.0	13		PCP (PENTACHLOROPHENOL), DISSOLVED	UG/L	Pesticide
87865	34460	20***	1.0	13		PCP (PENTACHLOROPHENOL), SUSPENDED	UG/L	Pesticide
85018	34461	30 <sup>P</sup>		7.7 <sup>P</sup>		PHENANTHRENE, TOTAL	UG/L	General Organic
85018	34462	30 <sup>P</sup>		7.7 <sup>P</sup>		PHENANTHRENE, DISSOLVED	UG/L	General Organic
85018	34463	30 <sup>P</sup>		7.7 <sup>P</sup>		PHENANTHRENE, SUSPENDED	UG/L	General Organic
108952	34466	10200*		5800*		PHENOL, DISSOLVED	UG/L	General Organic

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
108952	34467	10200*		5800*		PHENOL, SUSPENDED	UG/L	General Organic
127184	34475	5280*	5.0	10200*		TETRACHLOROETHYLENE, TOTAL	UG/L	General Organic
127184	34476	5280*	5.0	10200*		TETRACHLOROETHYLENE, DISSOLVED	UG/L	General Organic
127184	34477	5280*	5.0	10200*		TETRACHLOROETHYLENE, SUSPENDED	UG/L	General Organic
108883	34481	17500*	1000	6300*		TOLUENE, DISSOLVED	UG/L	General Organic
108883	34482	17500*	1000	6300*		TOLUENE, SUSPENDED	UG/L	General Organic
79016	34485	45000*	5.0	2000*		TRICHLOROETHYLENE, DISSOLVED	UG/L	General Organic
79016	34486	45000*	5.0	2000*		TRICHLOROETHYLENE, SUSPENDED	UG/L	General Organic
75014	34493		2.0			VINYL CHLORIDE, DISSOLVED	UG/L	General Organic
75014	34494		2.0			VINYL CHLORIDE, SUSPENDED	UG/L	General Organic
75354	34501		7.0			1,1-DICHLOROETHYLENE, TOTAL	UG/L	General Organic
75354	34502		7.0			1,1-DICHLOROETHYLENE, DISSOLVED	UG/L	General Organic
75354	34503		7.0			1,1-DICHLOROETHYLENE, SUSPENDED	UG/L	General Organic
71556	34506		200	31200*		1,1,1-TRICHLOROETHANE, TOTAL	UG/L	General Organic
71556	34507		200	31200*		1,1,1-TRICHLOROETHANE, DISSOLVED	UG/L	General Organic
71556	34508		200	31200*		1,1,1-TRICHLOROETHANE, SUSPENDED	UG/L	General Organic
79005	34511		5.0			1,1,2-TRICHLOROETHANE, TOTAL	UG/L	General Organic
79005	34512		5.0			1,1,2-TRICHLOROETHANE, DISSOLVED	UG/L	General Organic
79005	34513		5.0			1,1,2-TRICHLOROETHANE, SUSPENDED	UG/L	General Organic
79345	34516			9020*		1,1,2,2-TETRACHLOROETHANE, TOTAL	UG/L	General Organic

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
79345	34517			9020*		1,1,2,2-TETRACHLOROETHANE, DISSOLVED	UG/L	General Organic
79345	34518			9020*		1,1,2,2-TETRACHLOROETHANE, SUSPENDED	UG/L	General Organic
107062	34531	118000*	5.0	113000*		1,2-DICHLOROETHANE, TOTAL	UG/L	General Organic
107062	34532	118000*	5.0	113000*		1,2-DICHLOROETHANE, DISSOLVED	UG/L	General Organic
107062	34533	118000*	5.0	113000*		1,2-DICHLOROETHANE, SUSPENDED	UG/L	General Organic
95501	34536		600			1,2-DICHLOROBENZENE, TOTAL	UG/L	General Organic
95501	34537		600			1,2-DICHLOROBENZENE, DISSOLVED	UG/L	General Organic
95501	34538		600			1,2-DICHLOROBENZENE, SUSPENDED	UG/L	General Organic
78875	34541		5.0			1,2-DICHLOROPROPANE, TOTAL	UG/L	General Organic
78875	34542		5.0			1,2-DICHLOROPROPANE, DISSOLVED	UG/L	General Organic
78875	34543		5.0			1,2-DICHLOROPROPANE, SUSPENDED	UG/L	General Organic
156605	34546		100			TRANS-1,2-DICHLOROETHENE, TOTAL, IN WATER	UG/L	General Organic
156605	34547		100			TRANS-1,2-DICHLOROETHENE, DISSOLVED	UG/L	General Organic
156605	34548		100			TRANS-1,2-DICHLOROETHENE, SUSPENDED	UG/L	General Organic
120821	34551		70			1,2,4-TRICHLOROBENZENE, TOTAL	UG/L	General Organic
120821	34552		70			1,2,4-TRICHLOROBENZENE, DISSOLVED	UG/L	General Organic
120821	34553		70			1,2,4-TRICHLOROBENZENE, SUSPENDED	UG/L	General Organic
541731	34566		600			1,3-DICHLOROBENZENE, TOTAL	UG/L	General Organic
541731	34567		600			1,3-DICHLOROBENZENE, DISSOLVED	UG/L	General Organic
541731	34568		600			1,3-DICHLOROBENZENE, SUSPENDED	UG/L	General Organic

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
106467	34571		75			1,4-DICHLOROBENZENE, TOTAL	UG/L	General Organic
106467	34572		75			1,4-DICHLOROBENZENE, DISSOLVED	UG/L	General Organic
106467	34573		75			1,4-DICHLOROBENZENE, SUSPENDED	UG/L	General Organic
95578	34586	4380*				2-CHLOROPHENOL, TOTAL	UG/L	General Organic
95578	34587	4380*				2-CHLOROPHENOL, DISSOLVED	UG/L	General Organic
95578	34588	4380*				2-CHLOROPHENOL, SUSPENDED	UG/L	General Organic
120832	34601	2020*				2,4-DICHLOROPHENOL, TOTAL	UG/L	General Organic
120832	34602	2020*				2,4-DICHLOROPHENOL, DISSOLVED	UG/L	General Organic
120832	34603	2020*				2,4-DICHLOROPHENOL, SUSPENDED	UG/L	General Organic
105679	34606	2120*				2,4-DIMETHYLPHENOL, TOTAL	UG/L	General Organic
105679	34607	2120*				2,4-DIMETHYLPHENOL, DISSOLVED	UG/L	General Organic
105679	34608	2120*				2,4-DIMETHYLPHENOL, SUSPENDED	UG/L	General Organic
121142	34611	330*		590*		2,4-DINITROTOLUENE, TOTAL	UG/L	General Organic
121142	34612	330*		590*		2,4-DINITROTOLUENE, DISSOLVED	UG/L	General Organic
121142	34613	330*		590*		2,4-DINITROTOLUENE, SUSPENDED	UG/L	General Organic
72548	34651	0.6*		3.6*		P,P'-DDD, DISSOLVED	UG/L	Pesticide
72548	34652	0.6*		3.6*		P,P'-DDD, SUSPENDED	UG/L	Pesticide
72559	34653	1050*		14*		P,P'-DDE, DISSOLVED	UG/L	Pesticide
72559	34654	1050*		14*		P,P'-DDE, SUSPENDED	UG/L	Pesticide
50293	34655	1.1		0.13		P,P'-DDT, DISSOLVED	UG/L	Pesticide



C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
50293	34656	1.1		0.13		P,P'-DDT, SUSPENDED	UG/L	Pesticide
1746016	34675	0.01*	0.00003			2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN(TCDD), TOT	UG/L	General Organic
1746016	34676	0.01*	0.00003			2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN(TCDD), DISS	UG/L	General Organic
1746016	34677	0.01*	0.00003			2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN(TCDD), SUSP	UG/L	General Organic
108952	34694	10200*		5800*		PHENOL (C6H5OH) - SINGLE COMPOUND, TOTAL	UG/L	General Organic
91203	34696	2300*		2350*		NAPHTHALENE, TOTAL	UG/L	General Organic
75990	38432		200			DALAPON, WATER, TOTAL	UG/L	Pesticide
75990	38433		200			DALAPON, WATER, DISSOLVED	UG/L	Pesticide
75990	38434		200			DALAPON, WATER, SUSPENDED	UG/L	Pesticide
96128	38437		0.2			DIBROMOCHLOROPROPANE, WATER, TOTAL	UG/L	Pesticide
96128	38438		0.2			DIBROMOCHLOROPROPANE, WATER, DISSOLVED	UG/L	Pesticide
96128	38439		0.2			DIBROMOCHLOROPROPANE WATER, SUSPENDED	UG/L	Pesticide
96128	38760		0.2			DBCP, WATER, TOTAL	UG/L	Pesticide
96128	38761		0.2			DBCP, WATER, DISSOLVED	UG/L	Pesticide
96128	38762		0.2			DBCP, WATER, SUSPENDED	UG/L	Pesticide
88857	38779		7.0			DINOSEB, DISSOLVED	UG/L	Pesticide
88857	38780		7.0			DINOSEB, SUSPENDED	UG/L	Pesticide
23135220	38865		200			OXAMYL, TOTAL	UG/L	Pesticide
23135220	38866		200			OXAMYL, DISSOLVED	UG/L	Pesticide
23135220	38867		200			OXAMYL, SUSPENDED	UG/L	Pesticide

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
145733	38926		100			ENDOTHALL, WHOLE WATER SAMPLE	UG/L	Pesticide
2921882	38932	0.083		0.011		CHLORPYRIFOS, TOTAL RECOVERABLE	UG/L	Pesticide
2921882	38933	0.083		0.011		CHLORPYRIFOS, DISSOLVED	UG/L	Pesticide
2163806	38935		50			MONOSODIUM METHANEARSONATE (MSMA)	UG/L	Pesticide
2921882	39012	0.083		0.011		DURBAN, FLAME PHOTOMETRIC, WATER SAMPLE	UG/L	Pesticide
56382	39015	0.065				ETHYLPARATHION, FLAME IONIFATION, WATER SAMPLE	UG/L	Pesticide
122349	39025		4.0			SIMAZINE, COULSON CONDUCTIVITY WATER SAMPLE	UG/L	Pesticide
87865	39032	20***	1.0	13		PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE	UG/L	Pesticide
1912249	39033		3.0			ATRAZINE IN WHOLE WATER SAMPLE	UG/L	Pesticide
118741	39039	6.0 <sup>P</sup>	1.0			HEXACHLOROBENZENE WATER SAMPLE, ELECTRON CPT	UG/L	Pesticide
93721	39045		50			2,4,5-TP INCLUDES ACIDS & SALTS WATER SAMPLE	UG/L	Pesticide
116063	39053		3.0			ALDICARB IN WHOLE WATER	UG/L	Pesticide
122349	39055		4.0			SIMAZINE IN WHOLE WATER	UG/L	Pesticide
117817	39100	2000*	6.0			BIS(2-ETHYLHEXYL) PHTHALATE, WHOLE WATER	UG/L	General Organic
117817	39103	2000*	6.0			BIS(2-ETHYLHEXYL) PHTHALATE, DISSOLVED	UG/L	General Organic
117817	39104	2000*	6.0			BIS(2-ETHYLHEXYL) PHTHALATE, SUSPENDED	UG/L	General Organic
	39117	0.94*		2.994*		PHTHLATE ESTERS IN WATER	MG/L	General Organic
75014	39175		2.0			VINYL CHLORIDE-WHOLE WATER SAMPLE	UG/L	General Organic
79016	39180	45000*	5.0	2000*		TRICHLOROETHYLENE-WHOLE WATER SAMPLE	UG/L	General Organic
50293	39300	1.1		0.13		P,P' DDT IN WHOLE WATER SAMPLE	UG/L	Pesticide

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
72548	39310	0.6*		3.6*		P,P' DDD IN WHOLE WATER SAMPLE	UG/L	Pesticide
72559	39320	1050*		14*		P,P' DDE IN WHOLE WATER SAMPLE	UG/L	Pesticide
309002	39330	3.0		1.3		ALDRIN IN WHOLE WATER SAMPLE	UG/L	Pesticide
309002	39331	3.0		1.3		ALDRIN IN FILT. FRAC. OF WAT. SAMP.	UG/L	Pesticide
309002	39332	3.0		1.3		ALDRIN IN SUSP. FRAC. OF WAT. SAMP.	UG/L	Pesticide
58899	39340	2.0	0.2	0.16		GAMMA-BHC(LINDANE), WHOLE WATER	UG/L	Pesticide
58899	39341	2.0	0.2	0.16		GAMMA-BHC(LINDANE), DISSOLVED	UG/L	Pesticide
58899	39342	2.0	0.2	0.16		GAMMA-BHC(LINDANE), SUSPENDED	UG/L	Pesticide
57749	39350	2.4	2.0	0.09		CHLORDANE(TECH MIX & METABS), WHOLE WATER	UG/L	Pesticide
57749	39352	2.4	2.0	0.09		CHLORDANE(TECH MIX & METABS), DISSOLVED	UG/L	Pesticide
57749	39353	2.4	2.0	0.09		CHLORDANE(TECH MIX & METABS), SUSPENDED	UG/L	Pesticide
72548	39360	0.6*		3.6*		DDD IN WHOLE WATER SAMPLE	UG/L	Pesticide
72548	39361	0.6*		3.6*		DDD IN FILT. FRAC. OF WATER SMAPLE	UG/L	Pesticide
72548	39362	0.6*		3.6*		DDD IN SUSP. FRAC. OF WATER SAMPLE	UG/L	Pesticide
72559	39365	1050*		14*		DDE IN WHOLE WATER SAMPLE	UG/L	Pesticide
72559	39366	1050*		14*		DDE IN FILT. FRAC. OF WATER SAMPLE	UG/L	Pesticide
72559	39367	1050*		14*		DDE IN SUSP. FRAC. OF WATER SAMPLE	UG/L	Pesticide
50293	39370	1.1		0.13		DDT IN WHOLE WATER SAMPLE	UG/L	Pesticide
50293	39371	1.1		0.13		DDT IN FILT. FRAC. OF WATER SAMPLE	UG/L	Pesticide
50293	39372	1.1		0.13		DDT IN SUSP. FRAC. OF WATER SAMPLE	UG/L	Pesticide

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
60571	39380	2.5		0.71		DIELDRIN IN WHOLE WATER SAMPLE	UG/L	Pesticide
60571	39381	2.5		0.71		DIELDRIN IN FILT. FRAC. OF WATER SAMPLE	UG/L	Pesticide
60571	39382	2.5		0.71		DIELDRIN IN SUSP. FRAC. OF WATER SAMPLE	UG/L	Pesticide
115297	39388	0.22		0.034		ENDOSULFAN IN WHOLE WATER SAMPLE	UG/L	Pesticide
72208	39390	0.18	2.0	0.037		ENDRIN IN WHOLE WATER SAMPLE	UG/L	Pesticide
72208	39391	0.18	2.0	0.037		ENDRIN IN FILT. FRAC. OF WATER SAMPLE	UG/L	Pesticide
72208	39392	0.18	2.0	0.037		ENDRIN IN SUSP. FRAC. OF WATER SAMPLE	UG/L	Pesticide
8001352	39400	0.73	3.0	0.21		TOXAPHENE IN WHOLE WATER SAMPLE	UG/L	Pesticide
8001352	39401	0.73	3.0	0.21		TOXAPHENE IN FILT. FRAC. OF WATER SAMPLE	UG/L	Pesticide
8001352	39402	0.73	3.0	0.21		TOXAPHENE IN SUSP. FRAC. OF WATER SAMPLE	UG/L	Pesticide
76448	39410	0.52	0.4	0.053		HEPTACHLOR IN WHOLE WATER SAMPLE	UG/L	Pesticide
76448	39411	0.52	0.4	0.053		HEPTACHLOR IN FILT. FRAC. OF WATER SAMPLE	UG/L	Pesticide
76448	39412	0.52	0.4	0.053		HEPTACHLOR IN SUSP. FRAC. OF WATER SAMPLE	UG/L	Pesticide
1024573	39420	0.52	0.2	0.053		HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE	UG/L	Pesticide
1024573	39421	0.52	0.2	0.053		HEPTACHLOR EPOXIDE IN FILT. FRAC. WATER SAMPLE	UG/L	Pesticide
1024573	39422	0.52	0.2	0.053		HEPTACHLOR EPOXIDE IN SUSP. FRAC. WATER SAMPLE	UG/L	Pesticide
72435	39478		40			METHOXYCHLOR IN WHOLE WATER DISSOLVED	UG/L	Pesticide
72435	39479		40			METHOXYCHLOR IN WHOLE WATER SUSPENDED	UG/L	Pesticide
72435	39480		40			METHOXYCHLOR IN WHOLE WATER SAMPLE	UG/L	Pesticide
56382	39540	0.065				PARATHION IN WHOLE WATER SAMPLE	UG/L	Pesticide

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
56382	39542	0.065				PARATHION IN FILT. FRAC. OF WATER SAMPLE	UG/L	Pesticide
56382	39543	0.065				PARATHION IN SUSP. FRAC. OF WATER SAMPLE	UG/L	Pesticide
1912249	39630		3.0			ATRAZINE(AATREX) IN WHOLE WATER SAMPLE	UG/L	Pesticide
1912249	39632		3.0			ATRAZINE DISSOLVED IN WATER	PPB	Pesticide
118741	39700	6.0 <sup>P</sup>	1.0			HEXACHLOROBENZENE IN WHOLE WATER SAMPLE	UG/L	General Organic
87683	39702	90*		32*		HEXACHLOROBUTADIENE IN WHOLE WATER SAMPLE	UG/L	General Organic
1918021	39720		500			PICLORAM IN WHOLE WATER SAMPLE	UG/L	Pesticide
94757	39730		70			2,4-D IN WHOLE WATER SAMPLE	UG/L	Pesticide
94757	39732		70			2,4-D IN FILT. FRAC. OF WATER SAMPLE	UG/L	Pesticide
94757	39733		70			2,4-D IN SUSP. FRAC. OF WATER SAMPLE	UG/L	Pesticide
93721	39760		50			SILVEX IN WHOLE WATER SAMPLE	UG/L	Pesticide
93721	39762		50			SILVEX IN FILT. FRAC. OF WATER SAMPLE	UG/L	Pesticide
93721	39763		50			SILVEX IN SUSP. FRAC. OF WATER SAMPLE	UG/L	Pesticide
58899	39782	2.0	0.2	0.16		LINDANE IN WHOLE WATER SAMPLE	UG/L	Pesticide
1071836	39941		700			ROUNDUP IN WHOLE WATER SAMPLE (GLYPHOSATE)	UG/L	Pesticide
7782505	45650	0.019		0.013		CHLORINE, IN ORGANIC COMPOUNDS, WATER, WHOLE	MG/L	General Inorganic
56382	46315	0.065				ETHYL PARATHION IN WHOLE WATER SAMPLE	UG/L	Pesticide
58899	46322	2.0	0.2	0.16		LINDANE PLUS ISOMERS IN WHOLE WATER SAMPLE	UG/L	Pesticide
76448	46326	0.52	0.4	0.053		HEPTACHLOR AND METABOLITES IN WHOLE H2O SAMPLE	UG/L	Pesticide
15972608	46342		2.0			ALACHLOR (LASSO), WATER, DISSOLVED	UG/L	Pesticide

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
7782505	46472	0.019		0.013		CHLORINE, TOTAL RESIDUAL, AVERAGE VALUE, WATER	MG/L	General Inorganic
7782505	46473	0.019		0.013		CHLORINE, FREE AVAILABLE, AVERAGE VALUE, WATER	MG/L	General Inorganic
57125	46479	22	200	1.0		CYANIDE, DISSOLVED, WATER	UG/L	General Inorganic
7440382	46551	360	50	69		ARSENIC, FIELD ACIDIFIED W/HNO3, LAB FILTERED	UG/L	Metal
7440393	46558		2000			BARIUM, FIELD ACIDIFIED W/HNO3-LAB FILT	UG/L	Metal
7440439	46559	3.9 <sup>+</sup>	5.0	43		CADMIUM, FIELD ACIDIFIED-HNO3-LAB FILTER	UG/L	Metal
7440473	46560		100			CHROMIUM, FIELD ACIDIFIED-HNO3-LAB FILT.	UG/L	Metal
7440508	46562	18 <sup>+</sup>	1300 <sup>a</sup>	2.9		COPPER, FIELD ACIDIFIED-HNO3- LAB FILTER.	UG/L	Metal
7439921	46564	82 <sup>+</sup>	15 <sup>a</sup>	220		LEAD, FIELD ACIDIFIED-HNO3-LAB FILTERED	UG/L	Metal
7440224	46566	4.1 <sup>+</sup>	100 <sup>s</sup>	0.12		SILVER, FIELD ACIDIFIED-HNO3-LAB FILTER.	UG/L	Metal
7440666	46567	120 <sup>+</sup>	5000 <sup>s</sup>	95		ZINC, EXTRACTABLE, FIELD ACID W/HNO3, LAB FILTR	UG/L	Metal
56382	49011	0.065				UNKNOWN AS PARATHION IN WHOLE WATER SAMPLE	UG/L	Pesticide
7782505	50058	0.019		0.013		CHLORINE DOSE	MG/L	General Inorganic
7782505	50060	0.019		0.013		CHLORINE, TOTAL RESIDUAL	MG/L	General Inorganic
7782505	50064	0.019		0.013		CHLORINE, FREE AVAILABLE	MG/L	General Inorganic
7782505	50066	0.019		0.013		CHLORINE, COMBINED AVAILABLE	MG/L	General Inorganic
7782505	50074	0.019		0.013		CHLORITE, WHOLE WATER	MG/L	General Inorganic
	61215				200 <sup>^</sup>	FECAL COLIFORM, GENERAL #/100ML	#/100ML	Bacteriological
16887006	70352	860	250 <sup>s</sup>			CHLORIDE, ORGANIC	MG/L	General Organic
14797558	71850		44			NITRATE NITROGEN, TOTAL (AS NO3)	MG/L	Nitrogen

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
14797558	71851		44			NITRATE NITROGEN, DISSOLVED (AS NO3)	MG/L	Nitrogen
14797650	71855		3.3			NITRITE NITROGEN, TOTAL (AS NO2)	MG/L	Nitrogen
14797650	71856		3.3			NITRITE NITROGEN, DISSOLVED (AS NO2)	MG/L	Nitrogen
7439976	71890	2.4	2.0	2.1		MERCURY, DISSOLVED	UG/L	Metal
7439976	71895	2.4	2.0	2.1		MERCURY, SUSPENDED	UG/L	Metal
7439976	71900	2.4	2.0	2.1		MERCURY, TOTAL	UG/L	Metal
7439976	71901	2.4	2.0	2.1		MERCURY, TOTAL RECOVERABLE IN WATER AS HG	UG/L	Metal
7440439	71946	3.9 <sup>+</sup>	5.0	43		CADMIUM, EXTRACTABLE	UG/L	Metal
7440473	71947		100			CHROMIUM, EXTRACTABLE	UG/L	Metal
7439921	71949	82 <sup>+</sup>	15 <sup>a</sup>	220		LEAD, EXTRACTABLE	UG/L	Metal
7440666	71950	120 <sup>+</sup>	5000 <sup>s</sup>	95		ZINC, EXTRACTABLE	UG/L	Metal
7440508	71951	18 <sup>+</sup>	1300 <sup>a</sup>	2.9		COPPER, EXTRACTABLE	UG/L	Metal
1336363	76011	2000	500	10000		PCBS, SUSPENDED, WATER	NG/L	General Organic
1336363	76012	2000	500	10000		PCBS, TOTAL RECOVERABLE, WATER	NG/L	General Organic
156592	77093		70			CIS-1,2-DICHLOROETHYLENE, WHOLE WATER	UG/L	General Organic
100425	77128		100			STYRENE, WHOLE WATER	UG/L	General Organic
106489	77296			29700 <sup>*</sup>		P-CHLOROPHENOL, WHOLE WATER	UG/L	General Organic
106934	77651		0.05			1,2-DIBROMOETHANE, WHOLE WATER	UG/L	General Organic
95954	77687	100 <sup>p</sup>		240 <sup>p</sup>		2,4,5-TRICHLOROPHENOL, WHOLE WATER	UG/L	General Organic
935955	77769			440 <sup>*</sup>		2,3,5,6-TETRACHLOROPHENOL, WHOLE WATER	UG/L	General Organic

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
103231	77903		400			BIS (2-ETHYLHEXYL) ADIPATE, WHOLE WATER	UG/L	General Organic
18540299	78247	16	100	1100		CHROMIUM, HEXAVALENT, TOTAL RECOVERABLE	UG/L	Metal
57125	78248	22	200	1.0		CYANIDE, TOTAL RECOVERABLE, WATER, WHOLE	UG/L	Metal
	78456	11*		12*		HALOMETHANES, SUMMATION, WHOLE WATER	MG/L	General Organic
14808798	78462		250 <sup>s</sup>			SULFATE, WATER, DISSOLVED AS S	MG/L	Metal
85007	78885		20			DIQUAT DIBROMIDE (REGLONE) WHOLE WATER SAMPLE	UG/L	Pesticide
7440611	80020		20°			URANIUM, DISS. BY EXTRACTION FLUOROMETRIC	UG/L	Radiological
16065831	80357	1700	100	10300*		CHROMIUM, TRIVALENT, DISSOLVED	UG/L	Metal
57125	81208	0.022	0.2	0.001		CYANIDE,FREE (NOT AMENABLE TO CHLORINATION)	MG/L	General Inorganic
608731	81283	100*		0.34*		BENZENEHEXACHLORIDE, WHOLE WATER	UG/L	Pesticide
88857	81287		7.0			DNBP(C10H12N2O5), WHOLE WATER SAMPLE	UG/L	Pesticide
26638197	81327	23000*	5.0	10300*		DICHLOROPROPANE, WHOLE WATER SAMPLE	UG/L	General Organic
25321226	81333	1120*		1970*		DICHLOROBENZENE ISOMER, WHOLE WATER SAMPLE	UG/L	General Organic
2921882	81403	0.083		0.011		DURSBAN (CHLOROPYRIFOS) WHOLE WATER SAMPLE	UG/L	Pesticide
1563662	81405		40			CARBOFURAN (EURADAN) WHOLE WATER SAMPLE	UG/L	Pesticide
76017	81501	7240*		390*		PENTACHLOROETHANE, WHOLE WATER SAMPLE	UG/L	General Organic
25321226	81524	1120*		1970*		DICHLOROBENZENE, WHOLE WATER SAMPLE	UG/L	General Organic
25322207	81549	9320*				TETRACHLOROETHANE, WHOLE WATER SAMPLE	UG/L	General Organic
26638197	81703	23*	0.005*	10.3*		DICHLOROPROPANE, WHOLE WATER SAMPLE	MG/L	General Organic
7440508	81750	18 <sup>+</sup>	1300 <sup>a</sup>	2.9		COPPER, INTERSTITIAL WATERFROM SEDIMENTS	UG/L	Metal



C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
7440020	81752	1400 <sup>+</sup>	100	75		NICKEL, INTERSTITIAL WATER FROM SEDIMENTS	UG/L	Metal
7440666	81754	120 <sup>+</sup>	5000 <sup>s</sup>	95		ZINC, INTERSTITIAL WATER FROM SEDIMENTS	UG/L	Metal
25323891	81853	18000 <sup>*</sup>				TRICHLOROETHANE, WHOLE WATER SAMPLE	UG/L	General Organic
7439976	81931	2.4	2.0	2.1		MERCURY (HG) SUSPENDED FRACTION OF WATER	UG/G	Metal
7440666	81933	120 <sup>+</sup>	5000 <sup>s</sup>	95		ZINC (ZN) SUSPENDED FRACTION OF WATER	UG/G	Metal
7439921	81936	82 <sup>+</sup>	15 <sup>a</sup>	220		LEAD (PB) DISSOLVED CATIONIC SPECIES	UG/L	Metal
7440439	81937	3.9 <sup>+</sup>	5.0	43		CADMIUM (CD) DISSOLVED CATIONIC SPECIES	UG/L	Metal
7440473	81938		100			CHROMIUM (CR) DISSOLVED CATIONIC SPECIES	UG/L	Metal
7440508	81939	18 <sup>+</sup>	1300 <sup>a</sup>	2.9		COPPER (CU) DISSOLVED CATIONIC SPECIES	UG/L	Metal
7440666	81940	120 <sup>+</sup>	5000 <sup>s</sup>	95		ZINC (ZN) DISSOLVED CATIONIC SPECIES	UG/L	Metal
7440473	81941		100			CHROMIUM (CR) DISSOLVED ANIONIC SPECIES	UG/L	Metal
7440508	81942	18 <sup>+</sup>	1300 <sup>a</sup>	2.9		COPPER (CU) DISSOLVED ANIONIC SPECIES	UG/L	Metal
7440666	81943	120 <sup>+</sup>	5000 <sup>s</sup>	95		ZINC (ZN) DISSOLVED ANIONIC SPECIES	UG/L	Metal
	82078				50 <sup>l</sup>	TURBIDITY, FIELD	NTU	Physical
	82079				50 <sup>l</sup>	TURBIDITY, LAB	NTU	Physical
88857	82226		7.0			2 SECONDARY BUTYL 4,6-DINITROPHENOL	UG/L	Pesticide
16887006	82295	860000	250000 <sup>s</sup>			CHLORIDE DISSOLVED AS CL IN WATER	UG/L	General Inorganic
72435	82350		40			METHOXYCHLOR, DISSOLVED IN WATER	UG/L	Pesticide
72435	82351		40			METHOXYCHLOR, SUSPENDED IN WATER	UG/L	Pesticide
115297	82354	0.22		0.034		ENDOSULFAN, DISSOLVED IN WATER	UG/L	Pesticide

C.A.S. Number	STORET Code	FRESH ACUTE	DRINKING WATER	MARINE ACUTE	OTHER	PARAMETER DESCRIPTION	UNITS	CATEGORY
115297	82355	0.22		0.034		ENDOSULFAN, SUSPENDED IN WATER	UG/L	Pesticide
57125	82573	0.022	0.2	0.001		CYANIDE/CHLORINATION IN WATER	MG/L	General Inorganic
1646873	82586		4.0			ALDICARB SULFOXIDE, WATER, TOTAL RECOVERABLE	UG/L	General Organic
1646884	82587		2.0			ALDICARB SULFONE, WHOLE WATER, TOTAL RECOVERABLE	UG/L	General Organic
23135220	82613		200			OXAMYL, WHOLE WATER, TOTAL RECOVERABLE	UG/L	Pesticide
1563662	82615		40			CARBOFURAN, WHOLE WATER, TOTAL RECOVERABLE	UG/L	Pesticide
116063	82619		3.0			ALDICARB, WHOLE WATER, TOTAL RECOVERABLE	UG/L	Pesticide
33213659	82624	0.22		0.034		ENDOSULFAN, BETA, WH WATER, TOTAL RECOVERABLE	UG/L	Pesticide
96128	82625		0.2			DIBROMOCHLOROPROPANE, WATER, TOTAL RECOVERABLE	UG/L	Pesticide

**Footnote Key:**

\*Insufficient Data to Develop Criteria. Value Presented is the L.O.E.L. - Lowest Observed Effect Level.

+Hardness Dependent Criteria (100 mg/L CaCO<sub>3</sub> Used).

\*\*\*pH Dependent Criteria (7.8 pH Used).

▬Rule of thumb criterion used by the NPS Air Quality Division for determining sensitivity to acid deposition.

^Freshwater bathing criterion, EPA geometric mean based on at least 5 samples equally spaced over a 30-day period; Enterococci marine water bathing criterion 35 CFU/100 ml.

#EPA freshwater aquatic life chronic criterion; marine criterion is ≤6.5, ≥8.5.

!Arizona state standard.

<sup>a</sup>EPA action level, 40 CFR 141.80.

<sup>b</sup>California and Florida state bathing water standards.

<sup>c</sup>A Compilation of Water Quality Goals, California Regional Water Quality Control Board Central Valley Region, Sacramento, California, September, 1991.

<sup>n</sup>Total coliform drinking water maximum contaminant level (1 cfu/100ml or 1 mpn/100ml) was not used in water quality criteria comparisons.

<sup>p</sup>Proposed Criterion.

<sup>r</sup>Average annual concentration assumed to produce a total body or organ dose of 4 mrem/year, 40 CFR 141.16.

<sup>s</sup>EPA National Secondary Drinking Water Regulation, 40 CFR 143.

<sup>t</sup>The maximum contaminant level for the sum of the concentrations of trihalomethanes is 100 µg/L, 40 CFR 141.12.

<sup>u</sup>Coldwater criterion one day minimum; warmwater criterion seven day mean minimum.

## Appendix G

### Inventory Data Evaluation and Analysis (IDEA) Servicewide Inventory and Monitoring Program "Level I" Parameter Groups

The following table provides the Servicewide Inventory and Monitoring Program's "Level I" water quality inventory parameter groups (National Park Service 1993). In order to determine the presence and/or absence of data for each of these parameter groups in the park, the parameter groups had to be defined by STORET parameter codes. This table provides the STORET codes and parameter descriptions for each parameter comprising one of the Servicewide Inventory and Monitoring Program's "Level I" water quality parameter groups. Additional parameters could have been incorporated into each group, but an effort was made to represent each group with the parameters deemed to most likely occur in STORET and parks. The Toxic Elements Parameter Group was defined as the EPA's Clean Water Act Section 304(a) Priority Toxic Pollutants (40 CFR 131.36). Parameters are listed in ascending order of STORET code within each parameter group. It is important to note that similar parameters often have non-consecutive codes. Consequently, scanning the entire list is necessary to find all the parameters of a particular type (eg. lead, copper, etc.). Refer to the Parameter Period of Record Tabulation to obtain the STORET code for any parameter measured in the park.

<b>STORET Code</b>	<b>Water Temperature Parameter Group</b>	<b>C.A.S. Number</b>
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	-
00011	TEMPERATURE, WATER (DEGREES FAHRENHEIT)	-
<b>STORET Code</b>	<b>Flow Parameter Group<sup>1</sup></b>	<b>C.A.S. Number</b>
00056	FLOW RATE, GALLONS/DAY	-
00058	FLOW RATE, GALLONS/MIN.	-
00059	FLOW RATE, INSTANTANEOUS, GALLONS/MINUTE	-
00060	FLOW, STREAM, MEAN DAILY CFS	-
00061	FLOW, STREAM, INSTANTANEOUS CFS	-
00065	STAGE, STREAM (FEET)	-
00067	TIDE STAGE CODE	-
00072	STAGE, STREAM (METERS)	-

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<sup>1</sup>Tide stage is included in the Flow Parameter Group for coastal parks.

<b>STORET Code</b>	<b>Clarity/Turbidity Parameter Group</b>	<b>C.A.S. Number</b>
00070	TURBIDITY, (JACKSON CANDLE UNITS)	-
00075	TURBIDITY, HELLIGE (PPM AS SILICON DIOXIDE)	-
00076	TURBIDITY, HACH TURBIDIMETER (FORMAZIN TURB UNIT)	-
00077	TRANSPARENCY, SECCHI DISC (INCHES)	-
00078	TRANSPARENCY, SECCHI DISC (METERS)	-
00530	RESIDUE, TOTAL NONFILTRABLE (MG/L)	-
82078	TURBIDITY, FIELD NEPHELOMETRIC TURBIDITY UNITS NTU	-
82079	TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	-
<b>STORET Code</b>	<b>Conductivity Parameter Group</b>	<b>C.A.S. Number</b>
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM @ 25C)	-
00095	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25C)	-
00096	SALINITY AT 25 DEGREES C (MG/ML)	-
00480	SALINITY - PARTS PER THOUSAND	-
<b>STORET Code</b>	<b>Dissolved Oxygen Parameter Group</b>	<b>C.A.S. Number</b>
00299	OXYGEN, DISSOLVED, ANALYSIS BY PROBE (MG/L)	7782447
00300	OXYGEN, DISSOLVED (MG/L)	7782447
00301	OXYGEN, DISSOLVED, PERCENT OF SATURATION	7782447
00389	OXYGEN, DISSOLVED, LAB ANAL. BY PROBE OF FIELD SAMPLE (MG/L)	7782447
<b>STORET Code</b>	<b>pH Parameter Group</b>	<b>C.A.S. Number</b>
00400	PH (STANDARD UNITS)	-
00403	PH, LAB (STANDARD UNITS)	-
00406	PH, FIELD (STANDARD UNITS)	-

STORET Code	Alkalinity Parameter Group	C.A.S. Number
00409	ALKALINITY, TOTAL, LOW LEVEL GRAN ANALYSIS ( $\mu$ EQ/L)	471341
00410	ALKALINITY, TOTAL (MG/L AS $\text{CaCO}_3$ )	471341
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)	77098
00430	ALKALINITY, CARBONATE (MG/L AS $\text{CaCO}_3$ )	471341
00435	ACIDITY, TOTAL (MG/L AS $\text{CaCO}_3$ )	471341
00440	BICARBONATE ION (MG/L AS $\text{HCO}_3$ )	71523
00445	CARBONATE ION (MG/L AS $\text{CO}_3$ )	3812326
STORET Code	Nitrate/Nitrogen Parameter Group	C.A.S. Number
00600	NITROGEN, TOTAL (MG/L AS N)	17778880
00602	NITROGEN, DISSOLVED (MG/L AS N)	17778880
00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	17778880
00607	NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)	17778880
00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	17778880
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	17778880
00612	AMMONIA, UNIONIZED (MG/L AS N)	7664417
00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	17778880
00620	NITRATE NITROGEN, TOTAL (MG/L AS N)	17778880
00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	17778880
00625	NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	17778880
00630	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	17778880
00631	NITRITE PLUS NITRATE, DISSOLVED 1 DET. (MG/L AS N)	17778880
71845	NITROGEN, AMMONIA, TOTAL (MG/L AS $\text{NH}_4$ )	14798039
71846	NITROGEN, AMMONIA, DISSOLVED (MG/L AS $\text{NH}_4$ )	14798039
71850	NITRATE NITROGEN, TOTAL (MG/L AS $\text{NO}_3$ )	14797558
71851	NITRATE NITROGEN, DISSOLVED (MG/L AS $\text{NO}_3$ )	14797558
71855	NITRITE NITROGEN, TOTAL (MG/L AS $\text{NO}_2$ )	14797650
71856	NITRITE NITROGEN, DISSOLVED (MG/L AS $\text{NO}_2$ )	14797650

<b>STORET Code</b>	<b>Phosphate/Phosphorus Parameter Group</b>	<b>C.A.S. Number</b>
00650	PHOSPHATE, TOTAL (MG/L AS PO4)	14265442
00655	PHOSPHATE, POLY (MG/L AS PO4)	14265442
00660	PHOSPHATE, ORTHO (MG/L AS PO4)	14265442
00665	PHOSPHORUS, TOTAL (MG/L AS P)	7723140
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	7723140
00670	PHOSPHORUS, TOTAL ORGANIC (MG/L AS P)	7723140
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	7723140
70505	PHOSPHORUS, TOTAL, COLORIMETRIC METHOD (MG/L AS P)	7723140
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	7723140
<b>STORET Code</b>	<b>Sulfates/Total Dissolved Solids/Hardness Parameter Group</b>	<b>C.A.S. Number</b>
00900	HARDNESS, TOTAL (MG/L AS CaCO3)	471341
00945	SULFATE, TOTAL (MG/L AS SO4)	14808798
00946	SULFATE, DISSOLVED (MG/L AS SO4)	14808798
70300	RESIDUE, TOTAL FILTRABLE (DRIED AT 180C), (MG/L)	-
<b>STORET Code</b>	<b>Chlorophyll Parameter Group</b>	<b>C.A.S. Number</b>
32209	CHLOROPHYLL A (UG/L) FLUOROMETRIC CORRECTED	479618
32210	CHLOROPHYLL A (UG/L) TRICHROMATIC UNCORRECTED	479618
32211	CHLOROPHYLL A (UG/L) SPECTROPHOTOMETRIC ACID METH.	479618
32217	CHLOROPHYLL A (UG/L) FLUOROMETRIC UNCORRECTED	479618
32223	CHLOROPHYLL A (MG/M2) SPECTROPHOTOMETRIC CORRECTED	479618
32228	CHLOROPHYLL A (MG/M2) PERIPHYTON SPECTRO.	479618
32229	CHLOROPHYLL A (MG/M2) FLUOR. CORRECTED, SUBSTRATER	479618
32230	CHLOROPHYLL A (MG/L)	479618

<b>STORET Code</b>	<b>Bacteria Parameter Group</b>	<b>C.A.S. Number</b>
00111	RATIO OF FECAL COLIFORM TO FECAL STREPTOCOCCI	-
31501	COLIFORM, TOT, MEMBRANE FILTER, IMMED., M-ENDO MED,35C	-
31503	COLIFORM, TOT, MEMBRANE FILTER, DELAY, M-ENDO MED, 35C	-
31504	COLIFORM, TOT, MEMBRANE FILTER, IMMED., LES-ENDO AGAR, 35C	-
31505	COLIFORM, TOT, MPN, CONFIRMED TEST,35C(TUBE 31506)	-
31506	COLIFORM, TOT, MPN, CONFIRMED TEST, TUBE CONFIG.	-
31507	COLIFORM, TOT, MPN, COMPLETED TEST,35C(TUBE 31508)	-
31508	COLIFORM, TOT, MPN, COMPLETED TEST, TUBE CONFIG.	-
31613	FECAL COLIFORM, MEMBR, FILTER,M-FC AGAR,44.5C,24HR	-
31614	FECAL COLIFORM, MPN, TUBE CONFIGURATION	-
31615	FECAL COLIFORM, MPN, EC MED, 44.5C (TUBE 31614)	-
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5C	-
31617	FECAL COLIFORM, MPN,EIJKMAN TEST,44.5C(TUBE 31618)	-
31625	FECAL COLIFORM, MF, M-FC, 0.7 UM	-
31648	E. COLI - MTEC-MF	-
31649	ENTEROCOCCI- ME-MF	-
31673	FECAL STREPTOCOCCI, MBR FILT, KF AGAR, 35C, 48HR	-
31676	FECAL STREPTOCOCCI, MPN, KF BROTH, TUBE CONFIG.	-
31677	FECAL STREPTOCOCCI, MPN, AD-EVA, 35C (TUBE 31678)	-
31751	PLATE COUNT, TOTAL, TPC AGAR, 35C, 24 HRS	-
61214	FECAL STREPTOCOCCI, GENERAL #/100ML	-
61215	FECAL COLIFORM, GENERAL #/100ML	-
<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants)</b>	<b>C.A.S. Number</b>
00718	CYANIDE, WEAK ACID, DISSOC. WATER, WHOLE (UG/L)	57125
00719	CYANIDE, FREE, IN WATER & WASTEWATERS, HBG (UG/L)	57125
00720	CYANIDE, TOTAL (MG/L AS CN)	57125
00722	CYANIDE, FREE (AMENABLE TO CHLORINATION) (MG/L)	57125

<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
00723	CYANIDE, DISSOLVED STD METHOD (UG/L)	57125
00724	CYANIDE COMPLEXED TO A RANGE OF COMPNDS (UG/L)	57125
00969	CHRYSTILE ASBESTOS FIBERS/LITER	1332214
00973	AMPHIBOLE ASBESTOS FIBERS/LITER	1332214
00976	AMBIGUOUS ASBESTOS FIBERS/LITER	1332214
00977	NON-AMPHIBOLE NON-CHRYSTILE ASBESTOS FIBERS/LITER	1332214
00978	ARSENIC, TOTAL RECOVERABLE IN WATER AS AS	7440382
00981	SELENIUM, TOTAL RECOVERABLE IN WATER AS SE (UG/L)	7782492
00982	THALLIUM, TOTAL RECOVERABLE IN WATER AS (UG/L)	7440280
00990	SELENITE, TOTAL RECOVERABLE INORGANIC (UG/L)	7782492
00991	ARSENIC, TOTAL RECOVER. TRIVALENT INORGANIC (UG/L)	7440382
00995	ARSENIC, INORGANIC DISSOLVED (UG/L AS AS)	7440382
00996	ARSENIC, INORGANIC SUSPENDED (UG/L AS AS)	7440382
00997	ARSENIC, INORGANIC TOTAL (UG/L AS AS)	7440382
00998	BERYLLIUM, TOTAL RECOVERABLE IN WATER AS BE (UG/L)	7440417
01000	ARSENIC, DISSOLVED (UG/L AS AS)	7440382
01001	ARSENIC, SUSPENDED (UG/L AS AS)	7440382
01002	ARSENIC, TOTAL (UG/L AS AS)	7440382
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	7440417
01011	BERYLLIUM, SUSPENDED (UG/L AS BE)	7440417
01012	BERYLLIUM, TOTAL (UG/L AS BE)	7440417
01025	CADMIUM, DISSOLVED (UG/L AS CD)	7440439
01026	CADMIUM, SUSPENDED (UG/L AS CD)	7440439
01027	CADMIUM, TOTAL (UG/L AS CD)	7440439
01030	CHROMIUM, DISSOLVED (UG/L AS CR)	7440473
01031	CHROMIUM, SUSPENDED (UG/L AS CR)	7440473
01032	CHROMIUM, HEXAVALENT (UG/L AS CR)	7440473
01033	CHROMIUM, TRI-VAL (UG/L AS CR)	16065831
01034	CHROMIUM, TOTAL (UG/L AS CR)	7440473



<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
01040	COPPER, DISSOLVED (UG/L AS CU)	7440508
01041	COPPER, SUSPENDED (UG/L AS CU)	7440508
01042	COPPER, TOTAL (UG/L AS CU)	7440508
01049	LEAD, DISSOLVED (UG/L AS PB)	7439921
01050	LEAD, SUSPENDED (UG/L AS PB)	7439921
01051	LEAD, TOTAL (UG/L AS PB)	7439921
01057	THALLIUM, DISSOLVED (UG/L AS TL)	7440280
01058	THALLIUM, SUSPENDED (UG/L AS TL)	7440280
01059	THALLIUM, TOTAL (UG/L AS TL)	7440280
01065	NICKEL, DISSOLVED (UG/L AS NI)	7440020
01066	NICKEL, SUSPENDED (UG/L AS NI)	7440020
01067	NICKEL, TOTAL (UG/L AS NI)	7440020
01074	NICKEL, TOTAL RECOVERABLE IN WATER AS NI (UG/L)	7440020
01075	SILVER, DISSOLVED (UG/L AS AG)	7440224
01076	SILVER, SUSPENDED (UG/L AS AG)	7440224
01077	SILVER, TOTAL (UG/L AS AG)	7440224
01079	SILVER, TOTAL RECOVERABLE IN WATER AS AG (UG/L)	7440224
01089	COPPER AS SUSPENDED BLACK OXIDE IN WATER (MG/L)	7440508
01090	ZINC, DISSOLVED (UG/L AS ZN)	7440666
01091	ZINC, SUSPENDED (UG/L ZN)	7440666
01092	ZINC, TOTAL (UG/L AS ZN)	7440666
01094	ZINC, TOTAL RECOVERABLE IN WATER AS ZN (UG/L)	7440666
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	7440360
01096	ANTIMONY, SUSPENDED (UG/L AS SB)	7440360
01097	ANTIMONY, TOTAL (UG/L AS SB)	7440360
01113	CADMIUM, TOTAL RECOVERABLE IN WATER AS CD (UG/L)	7440439
01114	LEAD, TOTAL RECOVERABLE IN WATER AS PB (UG/L)	7439921
01118	CHROMIUM, TOTAL RECOVERABLE IN WATER AS CR (UG/L)	7440473
01119	COPPER, TOTAL RECOVERABLE IN WATER AS CU (UG/L)	7440508

<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
01124	THALLIUM, ACID SOLUBLE, WATER, WHOLE (UG/L)	7440280
01128	THALLIUM, TOTAL RECOVERABLE <95%, UG/L AS TL	7440280
01138	SELENIUM, IN WATER, LBS/DAY	7782492
01145	SELENIUM, DISSOLVED (UG/L AS SE)	7782492
01146	SELENIUM, SUSPENDED (UG/L AS SE)	7782492
01147	SELENIUM, TOTAL (UG/L AS SE)	7782492
01167	SELENIUM, ACID SOLUBLE, WATER, WHOLE (UG/L)	7782492
01220	CHROMIUM, HEXAVALENT, DISSOLVED IN (UG/L AS CR)	18540299
01252	ARSENIC, LB/DAY/CFS STREAM FLOW	7440382
01253	CADMIUM, LB/DAY/CFS STREAM FLOW	7440439
01254	CHROMIUM, TOTAL (LBS/DAY/CFS STREAM FLOW)	7740473
01255	CHROMIUM, HEXAVALENT, LB/DAY/CFS STREAM FLOW	18540299
01256	COPPER, LB/DAY/CFS STREAM FLOW	7440508
01257	CYANIDE LB/DAY/CFS STREAM FLOW	57125
01259	LEAD, LB/DAY/CFS STREAM FLOW	7439921
01260	MERCURY, LB/DAY/CFS STREAM FLOW	7439976
01261	NICKEL, LB/DAY/CFS STREAM FLOW	7440020
01263	SILVER, LB/DAY/CFS STREAM FLOW	7440224
01264	ZINC LB/DAY/CFS STREAM FLOW	7440666
01268	ANTIMONY, (SB), WATER, TOTAL RECOVERABLE (UG/L)	7440360
01291	CYANIDE, FILTERABLE, TOTAL IN WATER (UG/L)	57125
01303	ZINC, POTENTIALLY DISSOLVED WATER (MG/L)	7440666
01304	SILVER, POTENTIALLY DISSOLVED WATER (MG/L)	7440224
01306	COPPER, POTENTIALLY DISSOLVED WATER (MG/L)	7440508
01307	CHROMIUM, HEXAVALENT, POTENT. DISS. WATER (MG/L)	18540299
01309	ARSENIC, POTENTIALLY, DISSOLVED, WATER (MG/L)	7440382
01312	BERYLLIUM, POTENTIALLY, DISSOLVED, WATER (MG/L)	7440417
01313	CADMIUM, POTENTIALLY, DISSOLVED, WATER (MG/L)	7440439

<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
01314	CHROMIUM, TRIVALENT, POTENT., DISS., WATER (MG/L)	16065831
01318	LEAD, POTENTIALLY, DISSOLVED, WATER (MG/L)	7439921
01321	MERCURY, POTENTIALLY, DISSOLVED, WATER (MG/L)	7439976
01322	NICKEL, POTENTIALLY, DISSOLVED, WATER (MG/L)	7440020
01323	SELENIUM, POTENTIALLY, DISSOLVED, WATER (MG/L)	7782492
01324	THALLIUM, POTENTIALLY, DISSOLVED, WATER (MG/L)	7440280
01523	SILVER, IONIC (UG/L)	7440224
22675	SELENIUM, DISSOLVED ORGANIC (UG/L)	7782492
22676	SELENIUM, HEXAVALENT, DISSOLVED (UG/L)	7782492
22677	SELENIUM, TETRAVALENT, DISSOLVED	7782492
22678	ARSENIC, DISSOLVED ORGANIC (UG/L)	7440382
22679	ARSENIC, PENTAVALENT, DISSOLVED (UG/L)	7440382
22680	ARSENIC, TRIVALENT, DISSOLVED (UG/L)	7440382
30197	2-CHLOROETHYL VINYL ETHER, WATER, WHL, RECOVER (UG/L)	110758
30201	CHLOROMETHANE, WATER, WHOLE, RECOVERABLE (UG/L)	74873
30202	BROMOMETHANE, WATER, WHOLE, RECOVERABLE (UG/L)	74839
32003	CARBON CHLOROFORM AND CARBON ALCOHOL EXT. (UG/L)	67663
32005	CARBON CHLOROFORM EXTRACTABLES (UG/L)	67663
32021	CARBON CHLOROFORM EXTRACTS, ETHER INSOLUBLE (UG/L)	67663
32022	CARBON CHLOROFORM EXTRACTS, WATER SOLUBLES (UG/L)	67663
32101	BROMODICHLOROMETHANE, WHOLE WATER (UG/L)	75274
32102	CARBON TETRACHLORIDE, WHOLE WATER, (UG/L)	56235
32103	1,2-DICHLOROETHANE, WHOLE WATER (UG/L)	107062
32104	BROMOFORM, WHOLE WATER, (UG/L)	75252
32105	DIBROMOCHLOROMETHANE, WHOLE WATER, (UG/L)	124481
32106	CHLOROFORM, WHOLE WATER (UG/L)	67663
32260	CARBON TETRACHLORIDE EXTRACTABLES (MG/L)	56235
32270	CHLOROFORM EXTRACTABLES TOTAL IN MG PER LITER	67663

<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
34010	TOLUENE IN WTR SMPLE GC-MS, HEXADECONE EXT. (UG/L)	108883
34030	BENZENE IN WTR SMPLE GC-MS, HEXADECONE EXT. (UG/L)	71432
34198	BHC-DELTA, WATER, WHOLE (LBS/DAY)	319868
34200	ACENAPHTHYLENE, TOTAL (UG/L)	208968
34201	ACENAPHTHYLENE, DISSOLVED (UG/L)	208968
34202	ACENAPHTHYLENE, SUSPENDED (UG/L)	208968
34205	ACENAPHTHENE, TOTAL (UG/L)	83329
34206	ACENAPHTHENE, DISSOLVED (UG/L)	83329
34207	ACENAPHTHENE, SUSPENDED (UG/L)	83329
34210	ACROLEIN, TOTAL (UG/L)	107028
34211	ACROLEIN, DISSOLVED (UG/L)	107028
34212	ACROLEIN, SUSPENDED (UG/L)	107028
34215	ACRYLONITRILE, TOTAL (UG/L)	107131
34216	ACRYLONITRILE, DISSOLVED (UG/L)	107131
34217	ACRYLONITRILE, SUSPENDED (UG/L)	107131
34220	ANTHRACENE, TOTAL (UG/L)	120127
34221	ANTHRACENE, DISSOLVED (UG/L)	120127
34222	ANTHRACENE, SUSPENDED (UG/L)	120127
34225	ASBESTOS (FIBROUS) TOTAL (UG/L)	1332214
34226	ASBESTOS (FIBROUS) DISSOLVED (UG/L)	1332214
34227	ASBESTOS (FIBROUS) SUSPENDED (UG/L)	1332214
34230	BENZO(B)FLUORANTHENE, WHOLE WATER (UG/L)	205992
34231	BENZO(B)FLUORANTHENE, DISSOLVED (UG/L)	205992
34232	BENZO(B)FLUORANTHENE, SUSPENDED (UG/L)	205992
34235	BENZENE, DISSOLVED (UG/L)	71432
34236	BENZENE, SUSPENDED (UG/L)	71432
34239	BENZIDINE, DISSOLVED (UG/L)	92875
34240	BENZIDINE, SUSPENDED (UG/L)	92875

STORET Code	Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-	C.A.S. Number
34242	BENZO(K)FLUORANTHENE, TOTAL (UG/L)	207089
34243	BENZO(K)FLUORANTHENE, DISSOLVED (UG/L)	207089
34244	BENZO(K)FLUORANTHENE, SUSPENDED (UG/L)	207089
34247	BENZO-A-PYRENE, TOTAL (UG/L)	50328
34248	BENZO-A-PYRENE, DISSOLVED (UG/L)	50328
34249	BENZO-A-PYRENE, SUSPENDED (UG/L)	50328
34253	A-BHC-ALPHA, DISSOLVED (UG/L)	319846
34254	A-BHC-ALPHA, SUSPENDED (UG/L)	319846
34255	B-BHC-BETA, DISSOLVED (UG/L)	319857
34256	B-BHC-BETA, SUSPENDED (UG/L)	319857
34259	DELTA BENZENE HEXACHLORIDE, TOTAL (UG/L)	319868
34260	DELTA BENZENE HEXACHLORIDE, DISSOLVED (UG/L)	319868
34261	DELTA BENZENE HEXACHLORIDE, SUSPENDED (UG/L)	319868
34265	R-BHC (LINDANE) GAMMA, DISSOLVED (UG/L)	58899
34266	R-BHC (LINDANE) GAMMA, SUSPENDED (UG/L)	58899
34273	BIS (2-CHLOROETHYL) ETHER, TOTAL (UG/L)	111444
34274	BIS (2-CHLOROETHYL) ETHER, DISSOLVED (UG/L)	111444
34275	BIS (2-CHLOROETHYL) ETHER, SUSPENDED (UG/L)	111444
34278	BIS (2-CHLOROETHOXY) METHANE, TOTAL (UG/L)	111911
34279	BIS (2-CHLOROETHOXY) METHANE, DISSOLVED (UG/L)	111911
34280	BIS (2-CHLOROETHOXY) METHANE, SUSPENDED (UG/L)	111911
34288	BROMOFORM, DISSOLVED (UG/L)	75252
34289	BROMOFORM, SUSPENDED (UG/L)	75252
34292	N-BUTYL BENZYL PHTHALATE, WHOLE WATER (UG/L)	85687
34293	N-BUTYL BENZYL PHTHALATE, DISSOLVED (UG/L)	85687
34294	N-BUTYL BENZYL PHTHALATE, SUSPENDED (UG/L)	85687
34297	CARBON TETRACHLORIDE, DISSOLVED (UG/L)	56235
34298	CARBON TETRACHLORIDE, SUSPENDED (UG/L)	56235

<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
34301	CHLOROBENZENE, TOTAL (UG/L)	108907
34302	CHLOROBENZENE, DISSOLVED (UG/L)	108907
34303	CHLOROBENZENE, SUSPENDED (UG/L)	108907
34306	CHLORODIBROMOMETHANE, TOTAL (UG/L)	124481
34307	CHLORODIBROMOMETHANE, DISSOLVED (UG/L)	124481
34308	CHLORODIBROMOMETHANE, SUSPENDED (UG/L)	124481
34311	CHLOROETHANE, TOTAL (UG/L)	75003
34312	CHLOROETHANE, DISSOLVED (UG/L)	75003
34313	CHLOROETHANE, SUSPENDED (UG/L)	75003
34316	CHLOROFORM, DISSOLVED (UG/L)	67663
34317	CHLOROFORM, SUSPENDED (UG/L)	67663
34320	CHRYSENE, TOTAL (UG/L)	218019
34321	CHRYSENE, DISSOLVED (UG/L)	218019
34322	CHRYSENE, SUSPENDED (UG/L)	218019
34325	CYANIDE, SUSPENDED (MG/L)	57125
34327	DI-N-BUTYL PHTHALATE, DISSOLVED (UG/L)	84742
34328	DICHLOROBROMOMETHANE, DISSOLVED (UG/L)	75274
34329	DICHLOROBROMOMETHANE, SUSPENDED (UG/L)	75274
34336	DIETHYL PHTHALATE, TOTAL (UG/L)	84662
34337	DIETHYL PHTHALATE, DISSOLVED (UG/L)	84662
34338	DIETHYL PHTHALATE, SUSPENDED (UG/L)	84662
34341	DIMETHYL PHTHALATE, TOTAL (UG/L)	131113
34342	DIMETHYL PHTHALATE, DISSOLVED (UG/L)	131113
34343	DIMETHYL PHTHALATE, SUSPENDED (UG/L)	131113
34346	1,2-DIPHENYLHYDRAZINE, TOTAL (UG/L)	122667
34347	1,2-DIPHENYLHYDRAZINE, DISSOLVED (UG/L)	122667
34348	1,2-DIPHENYLHYDRAZINE, SUSPENDED (UG/L)	122667
34351	ENDOSULFAN SULFATE, TOTAL (UG/L)	1031078

<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
34352	ENDOSULFAN SULFATE, DISSOLVED (UG/L)	1031078
34353	ENDOSULFAN SULFATE, SUSPENDED (UG/L)	1031078
34356	ENDOSULFAN, BETA, TOTAL (UG/L)	33213659
34357	ENDOSULFAN, BETA, DISSOLVED (UG/L)	33213659
34358	ENDOSULFAN, BETA, SUSPENDED (UG/L)	33213659
34361	ENDOSULFAN, ALPHA, TOTAL (UG/L)	959988
34362	ENDOSULFAN, ALPHA, DISSOLVED (UG/L)	959988
34363	ENDOSULFAN, ALPHA, SUSPENDED (UG/L)	959988
34371	ETHYLBENZENE, TOTAL (UG/L)	100414
34372	ETHYLBENZENE, DISSOLVED (UG/L)	100414
34373	ETHYLBENZENE, SUSPENDED (UG/L)	100414
34376	FLUORANTHENE, TOTAL (UG/L)	206440
34377	FLUORANTHENE, DISSOLVED (UG/L)	206440
34378	FLUORANTHENE, SUSPENDED (UG/L)	206440
34381	FLUORENE, TOTAL (UG/L)	86737
34382	FLUORENE, DISSOLVED (UG/L)	86737
34383	FLUORENE, SUSPENDED (UG/L)	86737
34386	HEXACHLOROCYCLOPENTADIENE, TOTAL (UG/L)	77474
34387	HEXACHLOROCYCLOPENTADIENE, DISSOLVED (UG/L)	77474
34388	HEXACHLOROCYCLOPENTADIENE, SUSPENDED (UG/L)	77474
34391	HEXACHLOROBUTADIENE, TOTAL (UG/L)	87683
34392	HEXACHLOROBUTADIENE, DISSOLVED (UG/L)	87683
34393	HEXACHLOROBUTADIENE, SUSPENDED (UG/L)	87683
34396	HEXACHLOROETHANE, TOTAL (UG/L)	67721
34397	HEXACHLOROETHANE, DISSOLVED (UG/L)	67721
34398	HEXACHLOROETHANE, SUSPENDED (UG/L)	67721
34401	HEXACHLOROBENZENE, DISSOLVED (UG/L)	118741
34402	HEXACHLOROBENZENE, SUSPENDED (UG/L)	118741

<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
34403	INDENO (1,2,3-CD) PYRENE, TOTAL (UG/L)	193395
34404	INDENO (1,2,3-CD) PYRENE, DISSOLVED (UG/L)	193395
34405	INDENO (1,2,3-CD) PYRENE, SUSPENDED (UG/L)	193395
34408	ISOPHORONE, TOTAL (UG/L)	78591
34409	ISOPHORONE, DISSOLVED (UG/L)	78591
34410	ISOPHORONE, SUSPENDED (UG/L)	78591
34413	METHYL BROMIDE, TOTAL (UG/L)	74839
34414	METHYL BROMIDE, DISSOLVED (UG/L)	74839
34415	METHYL BROMIDE, SUSPENDED (UG/L)	74839
34418	METHYL CHLORIDE, TOTAL (UG/L)	74873
34419	METHYL CHLORIDE, DISSOLVED (UG/L)	74873
34420	METHYL CHLORIDE, SUSPENDED (UG/L)	74873
34423	METHYLENE CHLORIDE, TOTAL (UG/L)	75092
34424	METHYLENE CHLORIDE, DISSOLVED (UG/L)	75092
34425	METHYLENE CHLORIDE, SUSPENDED (UG/L)	75092
34428	N-NITROSODI-N-PROPYLAMINE, TOTAL (UG/L)	621647
34429	N-NITROSODI-N-PROPYLAMINE, DISSOLVED (UG/L)	621647
34430	N-NITROSODI-N-PROPYLAMINE, SUSPENDED (UG/L)	621647
34433	N-NITROSODIPHENYLAMINE, TOTAL (UG/L)	86306
34434	N-NITROSODIPHENYLAMINE, DISSOLVED (UG/L)	86306
34435	N-NITROSODIPHENYLAMINE, SUSPENDED (UG/L)	86306
34438	N-NITROSODIMETHYLAMINE, TOTAL (UG/L)	62759
34439	N-NITROSODIMETHYLAMINE, DISSOLVED (UG/L)	62759
34440	N-NITROSODIMETHYLAMINE, SUSPENDED (UG/L)	62759
34443	NAPHTHALENE, DISSOLVED (UG/L)	91203
34444	NAPHTHALENE, SUSPENDED (UG/L)	91203
34447	NITROBENZENE, TOTAL (UG/L)	98953
34448	NITROBENZENE, DISSOLVED (UG/L)	98953



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34449	NITROBENZENE, SUSPENDED (UG/L)	98953
34452	PARACHLOROMETA CRESOL, TOTAL (UG/L)	59507
34453	PARACHLOROMETA CRESOL, DISSOLVED (UG/L)	59507
34454	PARACHLOROMETA CRESOL, SUSPENDED (UG/L)	59507
34457	PCB - 1242, DISSOLVED (UG/L)	53469219
34458	PCB - 1242, SUSPENDED (UG/L)	53469219
34459	PCP (PENTACHLOROPHENOL), DISSOLVED (UG/L)	87865
34460	PCP (PENTACHLOROPHENOL), SUSPENDED (UG/L)	87865
34461	PHENANTHRENE, TOTAL (UG/L)	85018
34462	PHENANTHRENE, DISSOLVED (UG/L)	85018
34463	PHENANTHRENE, SUSPENDED (UG/L)	85018
34466	PHENOL, DISSOLVED (UG/L)	108952
34467	PHENOL, SUSPENDED (UG/L)	108952
34469	PYRENE, TOTAL (UG/L)	129000
34470	PYRENE, DISSOLVED (UG/L)	129000
34471	PYRENE, SUSPENDED (UG/L)	129000
34475	TETRACHLOROETHYLENE, TOTAL (UG/L)	127184
34476	TETRACHLOROETHYLENE, DISSOLVED (UG/L)	127184
34477	TETRACHLOROETHYLENE, SUSPENDED (UG/L)	127184
34481	TOLUENE, DISSOLVED (UG/L)	108883
34482	TOLUENE, SUSPENDED (UG/L)	108883
34485	TRICHLOROETHYLENE, DISSOLVED (UG/L)	79016
34486	TRICHLOROETHYLENE, SUSPENDED (UG/L)	79016
34493	VINYL CHLORIDE, DISSOLVED (UG/L)	75014
34494	VINYL CHLORIDE, SUSPENDED (UG/L)	75014
34496	1,1-DICHLOROETHANE, TOTAL (UG/L)	75343
34497	1,1-DICHLOROETHANE, DISSOLVED (UG/L)	75343
34498	1,1-DICHLOROETHANE, SUSPENDED (UG/L)	75343

<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
34501	1,1-DICHLOROETHYLENE, TOTAL (UG/L)	75354
34502	1,1-DICHLOROETHYLENE, DISSOLVED (UG/L)	75354
34503	1,1-DICHLOROETHYLENE, SUSPENDED (UG/L)	75354
34506	1,1,1-TRICHLOROETHANE, TOTAL (UG/L)	71556
34507	1,1,1-TRICHLOROETHANE, DISSOLVED (UG/L)	71556
34508	1,1,1-TRICHLOROETHANE, SUSPENDED (UG/L)	71556
34511	1,1,2-TRICHLOROETHANE, TOTAL (UG/L)	79005
34512	1,1,2-TRICHLOROETHANE, DISSOLVED (UG/L)	79005
34513	1,1,2-TRICHLOROETHANE, SUSPENDED (UG/L)	79005
34516	1,1,2,2-TETRACHLOROETHANE, TOTAL (UG/L)	79345
34517	1,1,2,2-TETRACHLOROETHANE, DISSOLVED (UG/L)	79345
34518	1,1,2,2-TETRACHLOROETHANE, SUSPENDED (UG/L)	79345
34521	BENZO(GHI)PERYLENE1,12-BENZOPERYLENE, TOTAL (UG/L)	191242
34522	BENZO(GHI)PERYLENE1,12-BENZOPERYLENE, DISS. (UG/L)	191242
34523	BENZO(GHI)PERYLENE1,12-BENZOPERYLENE, SUSP. (UG/L)	191242
34526	BENZO(A)ANTHRACENE1,2-BENZANTHRACENE, TOTAL (UG/L)	56553
34527	BENZO(A)ANTHRACENE1,2-BENZANTHRACENE, DISS. (UG/L)	56553
34528	BENZO(A)ANTHRACENE1,2-BENZANTHRACENE, SUSP. (UG/L)	56553
34531	1,2-DICHLOROETHANE, TOTAL (UG/L)	107062
34532	1,2-DICHLOROETHANE, DISSOLVED (UG/L)	107062
34533	1,2-DICHLOROETHANE, SUSPENDED (UG/L)	107062
34536	1,2-DICHLOROBENZENE, TOTAL (UG/L)	95501
34537	1,2-DICHLOROBENZENE, DISSOLVED (UG/L)	95501
34538	1,2-DICHLOROBENZENE, SUSPENDED (UG/L)	95501
34541	1,2-DICHLOROPROPANE, TOTAL (UG/L)	78875
34542	1,2-DICHLOROPROPANE, DISSOLVED (UG/L)	78875
34543	1,2-DICHLOROPROPANE, SUSPENDED (UG/L)	78875
34546	TRANS-1,2-DICHLOROETHENE, TOTAL, IN WATER (UG/L)	156605

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34547	TRANS-1,2-DICHLOROETHENE, DISSOLVED (UG/L)	156605
34548	TRANS-1,2-DICHLOROETHENE, SUSPENDED (UG/L)	156605
34551	1,2,4-TRICHLOROBENZENE, TOTAL (UG/L)	120821
34552	1,2,4-TRICHLOROBENZENE, DISSOLVED (UG/L)	120821
34553	1,2,4-TRICHLOROBENZENE, SUSPENDED (UG/L)	120821
34556	1,2,5,6-DIBENZANTHRACENE, TOTAL (UG/L)	53703
34557	1,2,5,6-DIBENZANTHRACENE, DISSOLVED (UG/L)	53703
34558	1,2,5,6-DIBENZANTHRACENE, SUSPENDED (UG/L)	53703
34561	1,3-DICHLOROPROPENE, TOTAL (UG/L)	542756
34562	1,3-DICHLOROPROPENE, DISSOLVED (UG/L)	542756
34563	1,3-DICHLOROPROPENE, SUSPENDED (UG/L)	542756
34566	1,3-DICHLOROBENZENE, TOTAL (UG/L)	541731
34567	1,3-DICHLOROBENZENE, DISSOLVED (UG/L)	541731
34568	1,3-DICHLOROBENZENE, SUSPENDED (UG/L)	541731
34571	1,4-DICHLOROBENZENE, TOTAL (UG/L)	106467
34572	1,4-DICHLOROBENZENE, DISSOLVED (UG/L)	106467
34573	1,4-DICHLOROBENZENE, SUSPENDED (UG/L)	106467
34576	2-CHLOROETHYL VINYL ETHER, TOTAL (UG/L)	110758
34577	2-CHLOROETHYL VINYL ETHER, DISSOLVED (UG/L)	110758
34578	2-CHLOROETHYL VINYL ETHER, SUSPENDED (UG/L)	110758
34581	2-CHLORONAPHTHALENE, TOTAL (UG/L)	91587
34582	2-CHLORONAPHTHALENE, DISSOLVED (UG/L)	91587
34583	2-CHLORONAPHTHALENE, SUSPENDED (UG/L)	91587
34586	2-CHLOROPHENOL, TOTAL (UG/L)	95578
34587	2-CHLOROPHENOL, DISSOLVED (UG/L)	95578
34588	2-CHLOROPHENOL, SUSPENDED (UG/L)	95578
34591	2-NITROPHENOL, TOTAL (UG/L)	88755
34592	2-NITROPHENOL, DISSOLVED (UG/L)	88755

STORET Code	Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-	C.A.S. Number
34593	2-NITROPHENOL, SUSPENDED (UG/L)	88755
34596	DI-N-OCTYL PHTHALATE, TOTAL (UG/L)	117840
34597	DI-N-OCTYL PHTHALATE, DISSOLVED (UG/L)	117840
34598	DI-N-OCTYL PHTHALATE, SUSPENDED (UG/L)	117840
34601	2,4-DICHLOROPHENOL, TOTAL (UG/L)	120832
34602	2,4-DICHLOROPHENOL, DISSOLVED (UG/L)	120832
34603	2,4-DICHLOROPHENOL, SUSPENDED (UG/L)	120832
34606	2,4-DIMETHYLPHENOL, TOTAL (UG/L)	105679
34607	2,4-DIMETHYLPHENOL, DISSOLVED (UG/L)	105679
34608	2,4-DIMETHYLPHENOL, SUSPENDED (UG/L)	105679
34611	2,4-DINITROTOLUENE, TOTAL (UG/L)	121142
34612	2,4-DINITROTOLUENE, DISSOLVED (UG/L)	121142
34613	2,4-DINITROTOLUENE, SUSPENDED (UG/L)	121142
34616	2,4-DINITROPHENOL, TOTAL (UG/L)	51285
34617	2,4-DINITROPHENOL, DISSOLVED (UG/L)	51285
34618	2,4-DINITROPHENOL, SUSPENDED (UG/L)	51285
34621	2,4,6-TRICHLOROPHENOL, TOTAL (UG/L)	88062
34622	2,4,6-TRICHLOROPHENOL, DISSOLVED (UG/L)	88062
34623	2,4,6-TRICHLOROPHENOL, SUSPENDED (UG/L)	88062
34626	2,6-DINITROTOLUENE, TOTAL (UG/L)	606202
34627	2,6-DINITROTOLUENE, DISSOLVED (UG/L)	606202
34628	2,6-DINITROTOLUENE, SUSPENDED (UG/L)	606202
34631	3,3'-DICHLOROBENZIDINE, TOTAL (UG/L)	91941
34632	3,3'-DICHLOROBENZIDINE, DISSOLVED (UG/L)	91941
34633	3,3'-DICHLOROBENZIDINE, SUSPENDED (UG/L)	91941
34636	4-BROMOPHENYL PHENYL ETHER, TOTAL (UG/L)	101553
34637	4-BROMOPHENYL PHENYL ETHER, DISSOLVED (UG/L)	101553
34638	4-BROMOPHENYL PHENYL ETHER, SUSPENDED (UG/L)	101553

STORET Code	Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-	C.A.S. Number
34641	4-CHLOROPHENYL PHENYL ETHER, TOTAL (UG/L)	7005723
34642	4-CHLOROPHENYL PHENYL ETHER, DISSOLVED (UG/L)	7005723
34643	4-CHLOROPHENYL PHENYL ETHER, SUSPENDED (UG/L)	7005723
34646	4-NITROPHENOL, TOTAL (UG/L)	100027
34647	4-NITROPHENOL, DISSOLVED (UG/L)	100027
34648	4-NITROPHENOL, SUSPENDED (UG/L)	100027
34651	P,P'-DDD, DISSOLVED (UG/L)	72548
34652	P,P'-DDD, SUSPENDED (UG/L)	72548
34653	P,P'-DDE, DISSOLVED (UG/L)	72559
34654	P,P'-DDE, SUSPENDED (UG/L)	72559
34655	P,P'-DDT, DISSOLVED (UG/L)	50293
34656	P,P'-DDT, SUSPENDED (UG/L)	50293
34657	DNOC (4,6-DINITRO-ORTHO-CRESOL), TOTAL (UG/L)	534521
34658	DNOC (4,6-DINITRO-ORTHO-CRESOL), DISSOLVED (UG/L)	534521
34659	DNOC (4,6-DINITRO-ORTHO-CRESOL), SUSPENDED (UG/L)	534521
34662	PCB - 1221, DISSOLVED (UG/L)	11104282
34663	PCB - 1221, SUSPENDED (UG/L)	11104282
34665	PCB - 1232, DISSOLVED (UG/L)	11141165
34666	PCB - 1232, SUSPENDED (UG/L)	11141165
34671	PCB - 1016, TOTAL (UG/L)	12674112
34672	PCB - 1016, DISSOLVED (UG/L)	12674112
34673	PCB - 1016, SUSPENDED (UG/L)	12674112
34675	2,3,7,8-TETRACHLORODIBENZO-PDIOXIN(TCDD),TOT(UG/L)	1746016
34676	2,3,7,8-TETRACHLORODIBENZO-PDIOXIN(TCDD)DISS(UG/L)	1746016
34677	2,3,7,8-TETRACHLORODIBENZO-PDIOXIN(TCDD)SUSP(UG/L)	1746016
34694	PHENOL(C6H5OH)-SINGLE COMPOUND TOTAL (UG/L)	108952
34696	NAPHTHALENE, TOTAL (UG/L)	91203
34750	2,3,7,8-TETRACHLORODIBENZO-PDIOXIN(TCDD)TOT(PG/L)	1746016

STORET Code	Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-	C.A.S. Number
34751	2,3,7,8-TETRACHLORODIBENZO-PDIOXIN(TCDD)DISS(PG/L)	1746016
34752	2,3,7,8-TETRACHLORODIBENZO-PDIOXIN(TCDD)SUSP(PG/L)	1746016
39032	PCP (PENTACHLOROPHENOL) WHOLE WATER SAMPLE (UG/L)	87865
39039	HEXACHLOROBENZENE WATER SAMPLE,ELECTRON CPT (UG/L)	118741
39100	BIS(2-ETHYLHEXYL) PHTHALATE, WHOLE WATER (UG/L)	117817
39103	BIS(2-ETHYLHEXYL) PHTHALATE, DISSOLVED, (UG/L)	117817
39104	BIS(2-ETHYLHEXYL) PHTHALATE, SUSPENDED, (UG/L)	117817
39107	PHTHALATES,DIETHYLHEXYL SUS.FRAC.WTR DWT (MG/KG)	117817
39110	DI-N-BUTYL PHTHALATE, WHOLE WATER (UG/L)	84742
39114	DI-N-BUTYL PHTHALATE, SUSPENDED (UG/L)	84742
39115	PHTHALATES,DIBUTYL SUS.FRAC.WATER DWT (UG/KG)	84742
39120	BENZIDINE IN WHOLE WATER SAMPLE (UG/L)	92875
39175	VINYL CHLORIDE-WHOLE WATER SAMPLE (UG/L)	75014
39180	TRICHLOROETHYLENE-WHOLE WATER SAMPLE (UG/L)	79016
39300	P,P' DDT IN WHOLE WATER SAMPLE (UG/L)	50293
39310	P,P' DDD IN WHOLE WATER SAMPLE (UG/L)	72548
39320	P,P' DDE IN WHOLE WATER SAMPLE (UG/L)	72559
39330	ALDRIN IN WHOLE WATER SAMPLE (UG/L)	309002
39331	ALDRIN IN FILT. FRAC. OF WAT. SAMP. (UG/L)	309002
39332	ALDRIN IN SUSP. FRAC. OF WAT. SAMP. (UG/L)	309002
39336	BHC-ALPHA, WATER, WHOLE (LBS/DAY)	319846
39337	ALPHA BENZENE HEXACHLORIDE IN WHOLE WATER (UG/L)	319846
39338	BETA BENZENE HEXACHLORIDE IN WHOLE WATER (UG/L)	319857
39340	GAMMA-BHC(LINDANE), WHOLE WATER (UG/L)	58899
39341	GAMMA-BHC(LINDANE), DISSOLVED (UG/L)	58899
39342	GAMMA-BHC(LINDANE), SUSPENDED (UG/L)	58899
39344	BHC-GAMMA, WATER, WHOLE (LBS/DAY)	58899
39350	CHLORDANE(TECH MIX & METABS), WHOLE WATER (UG/L)	57749

<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
39352	CHLORDANE(TECH MIX & METABS), DISSOLVED (UG/L)	57749
39353	CHLORDANE(TECH MIX & METABS), SUSPENDED (UG/L)	57749
39360	DDD IN WHOLE WATER SAMPLE (UG/L)	72548
39361	DDD IN FILT. FRAC. OF WATER SMAPLE (UG/L)	72548
39362	DDD IN SUSP. FRAC. OF WATER SAMPLE (UG/L)	72548
39365	DDE IN WHOLE WATER SAMPLE (UG/L)	72559
39366	DDE IN FILT. FRAC. OF WATER SAMPLE (UG/L)	72559
39367	DDE IN SUSP. FRAC. OF WATER SAMPLE (UG/L)	72559
39370	DDT IN WHOLE WATER SAMPLE (UG/L)	50293
39371	DDT IN FILT. FRAC. OF WATER SAMPLE (UG/L)	50293
39372	DDT IN SUSP. FRAC. OF WATER SAMPLE (UG/L)	50293
39380	DIELDRIN IN WHOLE WATER SAMPLE (UG/L)	60571
39381	DIELDRIN IN FILT. FRAC. OF WATER SAMPLE (UG/L)	60571
39382	DIELDRIN IN SUSP. FRAC. OF WATER SAMPLE (UG/L)	60571
39390	ENDRIN IN WHOLE WATER SAMPLE (UG/L)	72208
39391	ENDRIN IN FILT. FRAC. OF WATER SAMPLE (UG/L)	72208
39392	ENDRIN IN SUSP. FRAC. OF WATER SAMPLE (UG/L)	72208
39400	TOXAPHENE IN WHOLE WATER SAMPLE (UG/L)	8001352
39401	TOXAPHENE IN FILT. FRAC. OF WATER SAMPLE (UG/L)	8001352
39402	TOXAPHENE IN SUSP. FRAC. OF WATER SAMPLE (UG/L)	8001352
39410	HEPTACHLOR IN WHOLE WATER SAMPLE (UG/L)	76448
39411	HEPTACHLOR IN FILT. FRAC. OF WATER SAMPLE (UG/L)	76448
39412	HEPTACHLOR IN SUSP. FRAC. OF WATER SAMPLE (UG/L)	76448
39420	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	1024573
39421	HEPTACHLOR EPOXIDE IN FILT. FRAC. WAT. SAM. (UG/L)	1024573
39422	HEPTACHLOR EPOXIDE IN SUSP. FRAC. WAT. SAM. (UG/L)	1024573
39488	PCB - 1221 IN THE WHOLE WATER SAMPLE (UG/L)	11104282
39492	PCB - 1232 PCB SERIES WHOLE WATER SAMPLE (UG/L)	11141165

<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
39496	PCB - 1242 PCB SERIES WHOLE WATER SAMPLE (UG/L)	53469219
39500	PCB - 1248 PCB SERIES WHOLE WATER SAMPLE (UG/L)	12672296
39501	PCB - 1248 IN FILT. FRAC. OF WATER SAMPLE (UG/L)	12672296
39502	PCB - 1248 IN SUSP. FRAC. OF WATER SAMPLE (UG/L)	12672296
39504	PCB - 1254 PCB SERIES WHOLE WATER SAMPLE (UG/L)	11097691
39505	PCB - 1254 IN FILT. FRAC. OF WATER SAMPLE (UG/L)	11097691
39506	PCB - 1254 IN SUSP. FRAC. OF WATER SAMPLE (UG/L)	11097691
39508	PCB - 1260 PCB SERIES WHOLE WATER SAMPLE (UG/L)	11096825
39509	PCB - 1260 IN FILT. FRAC. OF WATER SAMPLE (UG/L)	11096825
39510	PCB - 1260 IN SUSP. FRAC. OF WATER SAMPLE (UG/L)	11096825
39700	HEXACHLOROBENZENE IN WHOLE WATER SAMPLE (UG/L)	118741
39702	HEXACHLOROBUTADIENE IN WHOLE WATER SAMPLE (UG/L)	87683
39782	LINDANE IN WHOLE WATER SAMPLE (UG/L)	58899
39920	DNOC IN WHOLE WATER SAMPLE (UG/L)	534521
46322	LINDANE PLUS ISOMERS IN WHOLE WATER SAMPLE (UG/L)	58899
46323	DELTA-BHC IN WHOLE WATER SAMPLE (UG/L)	319868
46326	HEPTACHLOR AND METABOLITES IN WH. H2O SAMP. (UG/L)	76448
46479	CYANIDE, DISSOLVED, WATER (UG/L)	57125
46551	ARSENIC, FIELD ACIDIFIED W/HNO3, LAB FILT. (UG/L)	7440382
46559	CADMIUM, FIELD ACIDIFIED-HNO3-LAB FILTER (UG/L-CD)	7440439
46560	CHROMIUM, FIELD ACIDIFIED-HNO3-LAB FILT. (UG/L-CR)	7440473
46562	COPPER, FIELD ACIDIFIED-HNO3-LAB FILTER. (UG/L-CU)	7440508
46564	LEAD, FIELD ACIDIFIED-HNO3-LAB FILTERED (UG/L-PB)	7439921
46566	SILVER, FIELD ACIDIFIED-HNO3-LAB FILTER.(UG/L-AG)	7440224
46567	ZINC, EXTRACT. FIELD ACID W/HNO3, LAB FILT. (UG/L)	7440666
70012	PARACHLOROMETA CRESOL, WATER, WHOLE (LBS/DAY)	59507
70017	HEXACHLOROCYCLOPENTADIENE, WATER, WHOLE (LBS/DAY)	77474
70021	LEAD, (TCLP), WATER, TOTAL (MG/L)	7439921



<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
71890	MERCURY, DISSOLVED (UG/L AS HG)	7439976
71895	MERCURY, SUSPENDED (UG/L AS HG)	7439976
71900	MERCURY, TOTAL (UG/L AS HG)	7439976
71901	MERCURY, TOTAL RECOVERABLE IN WATER AS HG (UG/L)	7439976
71946	CADMIUM, EXTRACTABLE (UG/L AS CD)	7440439
71947	CHROMIUM, EXTRACTABLE (UG/L AS CR)	7440473
71949	LEAD, EXTRACTABLE (UG/L AS PB)	7439921
71950	ZINC, EXTRACTABLE (UG/L AS ZN)	7440666
71951	COPPER, EXTRACTABLE (UG/L AS CU)	7440508
73063	CHLOROQUAIACOL,4-, TOTAL, WATER (UG/L)	16766306
73522	PROPANE, 2,2'-OXYBIS(1-CHLORO)- TOTAL (UG/L)	108601
77163	1,3-DICHLOROPROPENE-1, WHOLE WATER (UG/L)	542756
77354	1,1-DICHLORO-2,2-DIFLUOROETHANE WHOLE WATER (UG/L)	471432
77771	3-CHLORO-4-HYDROXYBENZOPHENONE, WHOLE WATER (UG/L)	55191203
78113	ETHYL BENZENE WHOLE WATER SAMPLE (UG/L)	100414
78124	BENZENE IN WATER (VOLATILE ANALYSIS) (UG/L)	71432
78131	TOLUENE IN WHOLE WATER (VOLATILE ANALYSIS) (UG/L)	108883
78208	2,4-DINITRO-O-CRESOL IN WHOLE WATER SAMPLE (UG/L)	534521
78247	CHROMIUM, HEXAVALENT, TOTAL RECOVERABLE, WT (UG/L)	18540299
78248	CYANIDE, TOTAL RECOVERABLE, WATER, WHOLE (UG/L)	57125
80357	CHROMIUM, TRIVALENT, DISSOLVED, AS CR	16065831
81208	CYANIDE, FREE (NOT AMEN. TO CHLORINATION) (MG/L)	57125
81210	CYANIDE - STATE OF ILLINOIS (MG/L)	57125
81214	CADMIUM - STATE OF ILLINOIS (MG/L)-COLD	7440439
81215	CHROMIUM - STATE OF ILLINOIS (MG/L), COLD DIGEST	18540299
81216	CHROMIUM(TRI)-STATE OF ILLINOIS (MG/L)-COLD DIGEST	16065831
81217	CHROMIUM, TOTAL - STATE OF ILLINOIS (MG/L) COLD DIGEST	7440473
81218	COPPER, STATE OF ILLINOIS, MG/L, COLD DIGEST	7440508

<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
81220	LEAD, STATE OF ILLINOIS, MG/L, COLD DIGEST	7439921
81222	NICKEL - STATE OF ILLINOIS, MG/L, COLD DIGEST	7440020
81223	SILVER, STATE OF ILLINOIS, MG/L, COLD DIGEST	7440224
81224	ZINC - STATE OF ILLINOIS, MG/L, COLD DIGEST	7440666
81642	SILVER (AG) IN WATER POUNDS PER DAY (LBS/DAY)	7440224
81750	COPPER, INTERSTITIAL WATER FROM SEDIMENTS (UG/L)	7440508
81751	LEAD, INTERSTITIAL WATER FROM SEDIMENTS (UG/L)	7439921
81752	NICKEL, INTERSTITIAL WATER FROM SEDIMENTS (UG/L)	7440020
81753	CADMIUM, INTERSTITIAL WATER FROM SEDIMENT	7440439
81754	ZINC, INTERSTITIAL WATER FROM SEDIMENTS (UG/L)	7440666
81766	HEPTACHLOR EPOXIDE IN EPILITHIC ALGAE SED. (UG/KG)	1024573
81931	MERCURY (HG) SUSPENDED FRACTION OF WATER (UG/G)	7439976
81932	CADMIUM (CD) SUSPENDED FRACTION OF WATER (UG/G)	7440439
81933	ZINC (ZN) SUSPENDED FRACTION OF WATER (UG/G)	7440666
81934	LEAD (PB) SUSPENDED FRACTION OF WATER (UG/G)	7439921
81936	LEAD (PB) DISSOLVED CATIONIC SPECIES (UG/L)	7439921
81937	CADMIUM (CD) DISSOLVED CATIONIC SPECIES (UG/L)	7440439
81938	CHROMIUM, DISSOLVED CATIONIC SPECIES (UG/L)	7440473
81939	COPPER (CU) DISSOLVED CATIONIC SPECIES (UG/L)	7440508
81940	ZINC (ZN) DISSOLVED CATIONIC SPECIES (UG/L)	7440666
81941	CHROMIUM, DISSOLVED ANIONIC SPECIES (UG/L)	7440473
81942	COPPER (CU) DISSOLVED ANIONIC SPECIES (UG/L)	7440508
81943	ZINC (ZN) DISSOLVED ANIONIC SPECIES (UG/L)	7440666
82058	CHROMIUM, TOTAL, PERCENT REMOVAL	7440473
82399	CHROMIUM, HEXAVALENT (KG/BATCH)	18540299
82512	M,P-DICHLOROBENZENE (MEASURES 1,3&1,4) TOT. (UG/L)	541731
82573	CYANIDE/CHLORINATION IN WATER (MG/L)	57125
82621	HEXACHLOROBENZENE, WATER, TOTAL RECOVER. (UG/L)	118741

<b>STORET Code</b>	<b>Toxic Elements (EPA Section 304(a) Priority Toxic Pollutants) cont.-</b>	<b>C.A.S. Number</b>
82622	ENDRIN ALDEHYDE, WH. WATER, TOTAL RECOVER. (UG/L)	7421934
82623	ENDOSULFAN SULFATE, WATER, TOTAL RECOVER. (UG/L)	1031078
82624	ENDOSULFAN, BETA, WH. WATER, TOTAL RECOVER. (UG/L)	33213659
82626	1,2-DIPHENYLHYDRAZINE, WATER, TOTAL RECOVER. (UG/L)	122667
82627	PARACHLOROMETA CRESOL, WATER, TOTAL RECOVER. (UG/L)	59507
85006	ZINC, TOTAL - (#/DAY)	7440666
85007	CHROMIUM, TOTAL (#/DAY)	7440473
85010	NICKEL, TOTAL - (#/DAY)	7440020
85013	MERCURY, TOTAL - (#/DAY)	7439976



## **Appendix H**

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As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The Department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.